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PSYCHOLOGY AND THE SCIENCES

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PREFACE

PSYCHOLOGY has had a long past, but a short history. Although it was recognized as a definite branch of knowledge in the times of the ancient Greeks, and was singled out by Aristotle for treatment in a distinct treatise, its general position until very recent times has been that of handmaid to the philosophical sciences, with but little independence of method, and none of aim or function.

Only within the last fifty years has it achieved independence of status comparable to that of the various physical sciences. Thanks to the development of the experimental method and to the adoption of biological modes of thought with regard to the workings of the mind, and (in quite recent years) to the employment of methods of "deep" analysis, its advance has been extraordinarily rapid, and it can now furnish its own conclusions, drawn from a great wealth of data, in regard to problems which are the more direct concern of allied sciences, such as ethics, logic, anthropology, biology, etc.

An interesting question now is . What are the views of specialists in such allied sciences as to the value of these advances of modern psychology? The following eight chapters furnish an answer to this question. They were delivered as lectures in my department in the

University of Oxford during the Michaelmas term of 1923, and although the various authors approached the problem along quite independent lines, they have reached results which seem sufficiently harmonious to justify the inclusion of the eight lectures in a single volume.

WILLIAM BROWN

PSYCHOLOGICAL LABORATORY,

CHRIST CHURCH,

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April 30th, 1924

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PSYCHOLOGY AND THE SCIENCES

I

PSYCHOLOGY AND BIOLOGY

By J S HALDANE, M D , L L D , F R S.

I AM well aware that in attempting to discuss the relations between biology and psychology I am dealing with two branches of knowledge both of which are as yet ill-defined. All are agreed, however, as to the immense practical importance of these subjects. The main object of this lecture is to attempt to define more clearly the distinctive characters of what we call psychological and what we call biological phenomena. If we can reach clearness as to this the problem of the relation of biology to psychology becomes simple.

I shall begin with psychology, as psychological phenomena are evidently more elementary than biological or physical phenomena. Whatever else it may be, the world as we experience it is a perceived world. It is what is perceived, and we can know nothing about it except what is revealed in the psychological phenomena of perception. If, neglecting the reasoning of Berkeley and Hume, we base our treatment of psychology on the assumption that though the physical world is per-

ceived the fact that it is perceived has no bearing on its nature, we are simply beating the air. We cannot, therefore, start from the unfounded supposition that there are separate things called minds, associated with other separate things called physical bodies. We must start from the observation of psychological phenomena themselves.

What, now, are the characters of psychological phenomena? Berkeley and Hume assumed that they are a flow of quite separate or separable sensations, impressions, or ideas, the latter being a fainter species of sensations which occur when previous sensations are remembered or imagined. On this assumption Hume built up a representation of psychological phenomena. Kant pointed out, however, that sensations cannot be regarded as isolable from one another. Their very existence involves relation to one another. A sensation or psychological experience, for instance, can only exist as something distinguished from past or anticipated sensations. This implies reference to past and anticipated sensations. That is to say, past and anticipated sensations are also present in any particular sensation. Retrospection and anticipation are of its essence. The sensation also exists here, and a sensation which is here implies the co-presence of what is elsewhere. Not even the vaguest of sensations, such as those of hunger or thirst, are without localization.

In the sensation there is also the recognition of similarity with or difference from previously and simultaneously existing sensations. It has therefore specific quality, and a system of qualities essentially related to other qualities is thus present in it. There is also in the sensation the recognition of influences pro-

duced by or upon what, relatively to changes, endures. It is only through the recognition of these causal influences that our experiences refer themselves to one another and so hang together in time as well as in space. Our psychological experience is thus of a system of enduring things arranged temporally and spatially in relation to one another, and possessing relative properties or actions on one another. From his analysis of perception Kant drew the fundamental conclusion that the ordinary physical conception of the world is already potentially implied in sensation, and that to attempt to derive this conception from assumed separate sensations is only to deceive ourselves, since the separate sensations are purely imaginary, and would not, if they existed, render such derivation possible.

The system of perception thus described in outline is Kant's phenomenal or psychological world. Our own bodies, along with other things, are part of this world, which from Kant's standpoint is simply the physical world looked at in the light of a general theory of relativity, though Kant never realised, or even hinted at, the modern applications of the theory of relativity. Nothing in this world exists for itself, but only in its relation to the other phenomena, both in time and space. In this sense, but only in this sense, Kant's world of perception is a unity, and the only order present in it is such as we assume to exist in what is regarded as a purely mechanical world. The qualities and distribution of things in this world may be anything, but they must be distributed temporally and spatially, and conform to what we call mechanical laws.

For Kant the world of perception was only a phe-

nomenal or artificial world. He believed that its general characteristics are due to the action of our minds in giving a certain order to impressions on it of a real or noumenal world of unknowable things. We order these impressions spatially and temporally, and by means of various general principles or categories, so that the perceived world appears to us as a mechanical world arranged in time and space.

With Kant's theory that a noumenal world exists behind this phenomenal world it is unnecessary to deal here. What concerns us is only the analysis of psychological phenomena as actually observed, and regardless for the moment of whether they are phenomenal or noumenal, or of the fact that, as was pointed out by his successors, there can be no real meaning in this distinction.

There are further characters of perception or conscious experience which Kant did not realise, but which are of essential importance. To him, as to Locke, the world of perception seemed to be *primarily* such a world as physical science appears to reveal to us. I wish to maintain, as emphatically as I can, that in this, in spite of the immense stride forward he had made, he was mistaken, and that his successors up to the present day have to a greater or less extent shared his mistake.

When we perceive things what we perceive is of interest to us, and similarly our reactions to perceptions are the reactions of interest. This is just an aspect of psychological reality, though an aspect which, as it seems to me, Kant completely missed in his analysis of the phenomena of perception. In consequence of this he left psychology up in the air and incapable of further development. If, moreover, we assume with

Kant that what is revealed to us in perception has the appearance of what we call the physical world, we must also admit that this world is coloured in the very peculiar manner recognized by Locke when he distinguished between the primary and secondary qualities of things. The things we perceive have qualities of smell, taste, colour, warmth or coldness, unpleasantness, etc. It is evident that these qualities do not belong to the physical interpretation of perception. Nevertheless both "secondary qualities" and "interests" enter into every part of psychological experience, and if we neglect them we are only dealing with truncated or abstract psychological experience—in other words with artificial or unreal experience.

This criticism of Kant's account of perception has already been made by Ward, and is emphasized in his recent Hertz Lecture on "Immanuel Kant" and in his "Study of Kant". In his subsequent writings Kant, as Ward points out, could not get back to the concrete world in connection with ethical and æsthetic values, on the importance of which he so strongly insisted. *

As will be shown later, the study of the typical "secondary" qualities can be connected with physiology. What I wish to discuss now, however, is psychological interest and its implications. The world of psychological experience is a world of interests. What does this imply? It evidently implies that the particular relations involved in psychological experiences are not a matter of chance or indifference. The experiences of hunger or thirst involve a tendency to eat or drink. The sight of an approaching body involves a tendency to avoid or repel it. The perception of a beautiful object involves a tendency to its preservation.

In general the sequence, distribution, and qualities of psychological experiences tend to be of such a nature that what we recognize as interests or values are maintained. The fact of interest is expressed in this maintenance, and what is perceived has "value" in proportion as it embodies interest.

If we put the matter differently, and say that we react in such a manner to physical stimuli that interests or values are maintained, we go beyond the psychological evidence. We are, as it were, attempting to jump out of our own skins. Psychological experience does not directly reveal a mere physical world such as is described by physical science, but a world ordered and unified through interests. The world of physical science is an abstraction from that of psychological experience, and a self distinguished from such a physical world is a similar abstraction. It is just part of the nature of psychological experience that it involves the maintenance of interest or value, and this basal fact must be recognized in the description of psychological experience.

Interest is not something merely immediate. What is coming is anticipated and provided for, and what is past is remembered and acted upon. Both the past and the future are thus not only present in any psychological experience, but they are present in a form ordered by interest and expressing value. The world of psychological experience as pictured by Kant is a chaotic world in detail, in it anything may be anywhere. The world of actual psychological experience is no chaotic world, but a world of interests and values realized or in process of realization—a world of order, however imperfect this order may be. We can disregard or abstract from the order, and when we do so

we have a chaotic world similar to that which Kant pictured, or which physical science ordinarily pictures to us, with the principle of relativity thrown in. But this chaotic world is not what psychological analysis reveals.

The world as pictured in physical science is a world of things existing quite apart from interests and values, while the psychological world is a world of embodied interests and values. Although the same things appear in both of them, these two worlds are very different. In the physical world there is an apparent endless variety of things, and corresponding multiplicity of action. In this variety of things and their actions we can trace the identity of the things and of the energy manifested in their action, but we can say nothing as to why particular things should be present and associated with particular properties or kinds and amounts of energy. Events have no values attached to them. In the psychological world of interests and values, on the other hand, the things and actions are connected together so as to form, however imperfectly, a persistent whole in which each part and action implies other parts and actions contributing to the maintenance of the whole. The things and actions we perceive are of significance or value, as, also, are our reactions to them. Throughout our perceptions and actions interests are present. We do not perceive or act upon what is of no interest or value. It is a world of both spatial and temporal unity, order, and value that psychological observation reveals to us, and this is just what is implied when we say that it is spiritual and not mere physical existence that is revealed by psychological observation.

If we start from the assumption that the world of our experience is a physical world, it then appears as if in the process of perception we were deliberately seeking out, and re-acting to, only certain aspects of reality as if, moreover, we were also colouring these aspects by the subjective addition of what Locke called secondary qualities. An ego within us seems to be twisting and adding to physical reality, so that the picture presented by our perceptions and actions has no longer the appearance of a physical world. We might put this down to the interference of a soul or mind within us, or to the complexities of structure acquired by living organisms in the long course of evolution. No such explanation is possible, however, since we are confronted by the reasoning of Berkeley and Hume. This reasoning shows that we cannot start our analysis of reality by assuming the existence of a physical world, since the assumption contradicts itself. The only course is to follow in Kant's path and observe what is implied in perception. But when we do this we find that perception implies not a mere physical world, but a world of interests and secondary qualities. The world as physical science regards it can therefore only be derived artificially from this world of ordinary perception, and is, in so far, only an ideal world, however real we have become accustomed to regard it as being.

Let us now consider more closely what is meant by the interests which psychological observation reveals. We can at once distinguish between what seem to be purely individual interests and those which we have in common with others. What we regard as purely individual interests may be considered first.

The perceptions and actions of each of us constitute a psychological unity which, in so far as it does not embody wider interests, expresses his individual interests. What concerns our own individual interests is attended to in perception, and our responses to these perceptions may be regarded as in our own interests. This means that perceptions and responses are so related that our ideally "normal" individual interests tend to be maintained. Our perceptions and corresponding actions are such that the eating, drinking, breathing, warmth, shelter, sense-impressions, and activities generally, which make up a "normal" state of individual contentment are maintained. Future individual needs are foreseen and provided for in the light of past experience.

The perceptions of a mere individual, if we imagined such a being, might be compared to those which we often attribute to an animal, though in reality they would be on a lower plane. Only what affected individual interest would be perceived or acted upon. The rest of what we ordinarily perceive would be a mere blank, totally unheeded. Nevertheless such psychological experience would constitute unity or personality, each element in which would be related to other elements in order of relative time, position, quality, quantity and activity. In virtue of activity suitably directed there would be unity of a sort; and in virtue of the power of prediction implied in perception of bodily parts and other things as possessing more or less definite and abiding properties there would be unity of present, past and future.

But such a person is a mere figment of imagination. Neither human interests, nor, as far as we can judge,

the interests of even the most lowly of animals, are merely individual. Psychological observation shows us at once that our interests are not merely those centred in our individual requirements. It is a wider world of psychological order, however imperfect, in which we find ourselves, and our interests express that order in so far as it is realised in us. Our mere individual interests are subordinated to, though still present in, the wider interests which embrace them. These wider interests appear in us under various forms. The form may be interest in family or race or mankind, and may manifest itself, perhaps, in extreme forms of individual self-sacrifice. Or the form may be loyalty to some organization such as an existing Church or State. It may also be interest in the beauty and order of Nature.

Psychological experience cannot be described with any adequacy as the experience of a mere individual person. In the experience of a duty to fellow men, or a beautiful object, or the verification of a theory, we identify ourselves with wider interests than that which constitutes our psychological existence as mere individuals. To attempt to represent the experience of a duty, or of what is beautiful, or true, as the mere experience of an individual is to attempt the impossible, and only produces confusion. The experience is certainly my experience, but the ego to which the experience belongs is no mere individual ego. This is so because the interest which is embodied in the experience is not that of a mere self-centred individual among other individuals.

We are accustomed to regard persons as self-existent units, and to approach psychology from a corresponding

point of view. Let us try to trace this mode of approach to its origin. From the standpoint of ordinary physics as formulated by Galileo and Newton a human or animal body is just a self-existent body among other bodies surrounding it. If, now, we assent to the common assumption that this physical description corresponds to reality, it follows that human beings are physical bodies "endowed" with consciousness, or inhabited by what we call individual minds. All perceptions and volitions must thus be located in individual bodies, and must therefore belong to individuals as such. If we carry physical interpretation and investigation further we seem forced to locate perception and volition in the brain, as Descartes did. Experiences of duty or of beauty must be located there, along with any other psychological experiences. They are just the experiences of an individual as such.

But we can press the same line of reasoning still further. When we examine the brain in the light of physical interpretation we find that it is composed of separate cells. The activities of the brain are thus a sum of the activities of separate cells. The cells themselves are also aggregates of molecules, which in the living body must apparently be constantly acting on one another chemically or physically, so that we are led on to regarding processes in the brain as a sum of the activities of countless molecules—in other words as a sum of what are called bio-chemical processes. We are thus landed in a region of indefinite complexity and profound obscurity. Even the conception of a single self-existent person seems to have lost its meaning. What confronts us is at the best an aggregate of an indefinite number of personalities.

It was just because this method of reasoning leads nowhere that I was careful at the outset of this paper to point out that psychology can only be approached by means of psychological observation. We cannot go back to the reasoning of Descartes, neglecting Hume and Kant. But this is just what we are doing when we apply the conceptions of ordinary physics to the elucidation of psychological phenomena. We do so in all innocence, just as in ordinary life we regard the earth as flat, or the sun and stars as revolving round it, thus disregarding Copernicus as completely as we disregard Hume and Kant when we apply physical hypotheses in psychology. It was analysis of the observed facts that led Copernicus and Newton to their revolutionary theories, and that has led Einstein to his revolutionary conception of time, space, and the physical world. It was also analysis of the observed facts relating to perception that led Hume and Kant to their conclusions as to the nature of those physical objects which to the average man seem so completely self-existent. We can no more base psychology on ordinary physical interpretations than we can base astronomy on the pre-Copernican and pre-Newtonian ideas of an uneducated person. To regard mind as something which appears or "emerges" in time is also impossible, since, as Kant pointed out, time-relations are within, and not outside of, psychological experiences. What is called physiological psychology is ordinarily based on the assumption that we can interpret psychological phenomena in the light of physical conceptions. This assumption appears to me as a mixture of very rudimentary physiology with psychology which has been obsolete since Hume and Kant. It is doubtless

the case that a very wide public is always ready to accept the assumption in question, and to regard it as self-evident that purely physical events determine psychological events, but a still wider public would accept the assumption that the sun goes round the earth.

The conclusion of this argument is that only in the light of psychological observation can we draw conclusions as to the nature of personality, and that this observation shows us that it is impossible to express the facts of our conscious experience in terms of our mere individual personalities. In identifying ourselves with far wider interests than those of our individual personalities we at the same time transcend the latter. I shall not attempt to develop here the relations of this conclusion to ethics and religion, as I must now turn to biology in its relations to psychology.

Here I am in a difficulty as there is at present so much disagreement as to the distinction, if any, between biology and the physical sciences. For what may be called the mechanistic school of biologists biology represents nothing more than the application of physical and chemical analysis to the phenomena of life. This school maintains that though psychology, which deals with that mysterious thing called consciousness, may go its own way, biology, which deals with what we can see and handle, can be nothing but applied physics and chemistry. Another school regards this attitude as insufficient scientifically, and seeks to bring psychological conceptions into biology. My own position as a physiologist may perhaps be fairly described as an intermediate one, since I agree that physical and chemical conceptions are insufficient in biology, but regard the standpoints of biology and psychology as

quite different. In any case it seems necessary to discuss the relations of psychology to physical science. I shall first attempt this task, and from the standpoint already taken up with regard to psychology.

The scientific conception of a physical world is comparatively modern. In early times the world appeared as peopled by spiritual powers, friendly or hostile, reaching out in every direction, whereas now we commonly picture the world outside the bodies of living creatures as completely inanimate and indifferent to interests or values of any sort. How has this change from a psychological to a physical interpretation come about? The suggestion might be made that it is only necessary to look steadily in order to see the world just as the ordinary popular science of our generation depicts it. But our ancestors had at least as good powers of vision as we have, and they saw something different. It was their interpretation that was different, and we only deceive ourselves if we imagine that vision and interpretation can be separated.

It seems to me that the clue to the origin of what we call scientific conceptions of the physical world lies in the nature and authority of the different interests realized in us, and the corresponding values. To a mere individual regarded as such the value of anything outside his own body and more immediate belongings is fleeting. The value of food or drink, for instance, varies according as he himself happens to be hungry or thirsty, or is likely to become short of food or drink. From the wider standpoint of the interests of a community food and drink have, however, a more definite and lasting value. It is the same with the value of land and of various other commodities. They thus

possess " market " values, which it becomes a matter of importance to measure with a view to proper management, allotment or production in the common interest. In a similar manner a corresponding measurement of time becomes important. In their origin the units of measurement are convenient units of value based on communal interest and apart from fleeting individual interests. The balance was originally a tool of justice or fairness. By neglecting or forgetting the nature of the process of abstraction involved men reached the conceptions of duration, extension, mass, movement, etc., as being things existing in themselves. In reality these conceptions still depend on interests. The world of mathematics and physics, if conceived as a world independent of our perceptions and interests, is only a world of abstractions, and the applications of the principle of relativity in mathematics and physics are beginning to awaken us to this fact. We are witnessing the reinterpretation of the supposed self-existent physical world of Galileo, Newton, and the nineteenth century. The physical world as still ordinarily conceived is an extremely useful abstraction from, or partial representation of, what we perceive. Its usefulness will continue and develop in all directions, but it can never form the basis of psychology, since its own basis is psychological.

The utility of the abstract physical conception of the world depends on the fact that we can make use of abstract knowledge in cases where more complete psychological apprehension is absent. For certain practical purposes there is equivalence between a ton of coal, a ton of gold and a ton of human beings. It may also be a matter of indifference in some particular

respect whether it is the ton of coal or of gold or of human beings that is a mile away. In the one case we may only need to think of what we call their mass, and in the other of what we call their distance away. The faculty of abstraction furnishes us with abstract or scientific knowledge, and by means of the abstractions of knowledge our practical capacities are immensely extended. If, however, we mistake the abstractions of physical, mathematical or other science for anything more than abstractions, we fall into confusion and error

Scientific knowledge is "objective" What is implied in this description is not that it represents a reality independent of our perception of it (since such reality could never be known), but that it is communicable to others, and not the private perception of a mere individual In identifying our interests with those of others we transcend our mere individual personalities and are thus in direct communication with others. Scientific knowledge implies the existence of common interest Scientific conclusions and the modes of representing scientific observation alter from generation to generation It is, for instance, somewhat difficult for us to realize what Priestley and Cavendish meant by "phlogisticated air," or what the chemists of a previous generation meant by "sulphur." But for each generation and community scientific description expresses a common interpretation which for the time is "objective," and which is born of common interest.

We can apply with great practical success the abstractions of ordinary physics and chemistry to the prediction of phenomena outside the bodies of living organisms. But when we come to deal with living

organisms themselves, including our own organisms, we encounter the most formidable obstacles. In the popular accounts which pass current as representations of biological knowledge these obstacles are commonly slurred over almost entirely. I must therefore endeavour to describe them shortly.

In a living organism the response to any stimulus, whether we interpret the stimulus as a physical or a chemical one, is found to be dependent immediately on a vast and indefinite number of other conditions. When the organism is perfectly "normal" these conditions are practically constant, so that the same response may follow the same stimulus time after time, just as a tuning-fork responds time after time in the same way when disturbed in the same way. But an apparently quite trivial physical or chemical disturbance in the organism may completely alter the response, or entirely prevent it: in this respect the organism is quite different from the tuning-fork. On the other hand the life of the organism always tends to maintain or return to normal conditions. It maintains or reproduces, not only its evident structure, but the minutest details of composition and activity. How delicate this maintenance is we are realizing with greater and greater fullness every year as the delicacy of our methods of investigation increases. The progress in this direction during the last few years has been extraordinary. Among those who are not physiologists the idea is still almost universal that the application of exact and quantitative methods to physiological investigation is progressively revealing a mechanism of life. What is actually being revealed more and more fully is the amazing detail of organic regulation.

We are familiar with physical and chemical systems which are just as sensitive to disturbance as the bodies of living organisms, but apart from living organisms we know of no such systems which possess the characteristic of constantly tending to come back to a "normal" of structure, activity, and environment, and to reproduce this normal in successive generations. Perhaps the nearest approach to such a system is the atom as conceived by Niels Bohr. The Bohr atom conserves its structure and basal activity, but atoms are not yet conceived as capable of assimilation and reproduction.

It is because of the fundamental character which life possesses of maintaining and reproducing organic structure, activities, and relation to environment, that I am quite unable to accept the mechanistic conception of life as outlined by Descartes and generally accepted by the last generation of biologists. The life of an organism can only be interpreted or described as organic behaviour. It cannot be analysed, as we analyse the working of a machine, into a sum of the behaviours of separable parts. The conception of an organism as a machine is far more useful than no clear conception of it at all, but seems to me quite insufficient for scientific biology—insufficient because it gives us a quite inadequate power of prediction. In practical medicine this insufficiency is glaring, as I have more than once pointed out elsewhere.

With the conception of life as being an organic whole we make the conception of organic determination the basis of biology for the details of bodily structure, environment and activity in the life of an organism are conceived as being determined in reference to the

maintenance of an organic whole. At first sight this may seem to be contradicted by the commonest observation, since an organism appears to be dependent on chance events in its environment. It may seem to depend, for instance, on the apparently chance presence of food, drink, or oxygen, and on chance stimuli of all kinds. But we must look more closely, as a biologist has to look. We then see that it is a biological, and not a mere physical environment, that biology deals with. The intake of food, drink, and oxygen are regulated physiologically, so that chance variations in their abundance are of relatively small account within wide limits. Moreover, they are stored within the body itself, and the stores are used so as to steady their supply at the points where they are utilized. Similarly the physiological action of sensory stimuli is regulated physiologically. Thus within wide limits the appearance of brightness in any object depends, not on its brightness in the physical sense, but on the general illumination of the visual field. An object of which the physical illumination remains constant may be made to appear dark in surrounding daylight, but of dazzling brightness in surrounding darkness. When, moreover, all external light stimuli in the physical sense are cut off, the visual field remains still illuminated, just as when food and drink are cut off the supply of food and water to the tissues is maintained from the stores within the body.

The physiological response to colour stimuli is regulated in exactly the same way. It is only in generally diffused daylight that the colours seen in objects depend on the wave-lengths of the light-rays proceeding from the objects. With a different kind of illumination the colours are all altered, and even with

daylight they depend to a very appreciable extent on the quality of the daylight, as appears at once when accurate colorimetric measurements are made. The same illuminated surfaces, illuminated in exactly the same way in the physical sense, can be made to appear white or black, or blue or green or red or yellow, according to the surrounding illumination. Sensory excitation is thus regulated physiologically, and the otherwise puzzling changes in "secondary" qualities become intelligible. When we realise that we are living organisms and not mere physical bodies, we can see at once why there are "secondary" qualities which do not correspond with "physical" qualities.

When one enquires further into the nature of this regulation one finds that as regards brightness and colour, white being regarded as a balanced mixture of colours, the field of vision as a whole tends to remain steady, just as the composition of the blood-plasma tends to remain steady in spite of great variations in the nature and amount of what enters the body. Over an immense range of intensity of physical illumination we see things equally well and in the same colours.

Into the physiology of the senses organic determination enters at every point. We also meet with this everywhere else in physiology and anatomy, while in practical medicine and surgery the conception of organic determination seems to me absolutely essential. If we eliminate it we reduce biology and medicine to an unintelligible chaos. Scientific medicine is based on the fact that after any disturbance the life of an organism tends to return to a normal, and that this return may be greatly facilitated by therapeutic measures.

Not only the organic determination of individual lives, but that of communities of organisms, enters into biology. Many biological phenomena, including that of death of the individual, would be quite unintelligible otherwise. For biology life is immanent in the universe. The idea that life might originate from mechanical conditions in which no life was present, or might, to use Lloyd Morgan's expression, "emerge" from them, has no meaning from this standpoint. The hypothesis of emergence is only necessitated by the baseless assumption that a world of mechanism is not only a useful abstraction, but corresponds to reality itself.

These conclusions are, I am quite well aware, not in accordance with much of the popular science of the present day. But they are the result of close biological study, and I have no doubt that in course of time they will take their place in popular science. I cannot for a moment accept the conclusion that biology is only an exact science in so far as physical and mathematical reasoning are introduced into it. As soon as we grasp the fundamental conception of life biology itself becomes for us an exact science, since organic regulation is exact regulation. In this connection it may also be remarked that exactitude in the "humanistic" branches of knowledge which deal with interests and values is just as real as exactitude in physics or mathematics. Exact scholarship has the same objective significance as exact physical measurement.

When one looks more closely into the conception required in the interpretation of ordinary biological observations it appears that in what we interpret as mere life, apart from consciousness, past or anticipated events are not conceived as directly involved in the

phenomenon observed. An organism, for example, develops in a certain way, but each step in the development is regarded as a response to immediate stimuli. The present of what is conceived as a mere organism depends, of course, indirectly on its past, and its future depends indirectly on its present; but this is also true of any mechanically determined event. The mere organism is regarded as living a life of blind immediacy into which the past and future do not enter directly, whereas in conscious experience, looking back and looking forward are always directly involved, as I have already pointed out in connection with Kant's conclusions. This is what, as it seems to me, distinguishes biology from psychology. For the ordinary purposes of scientific biology and practical medicine organisms are not regarded as conscious, and, as it seems to me, there is no immediate need for so regarding them. In this matter I differ from the animistic school of biologists, though agreeing with their rejection of a mechanistic basis for biology. It seems to me that biology belongs to a different plane of scientific interpretation from comparative psychology and anthropology.

I can now come back to the immediate subject of this lecture. At the outset of the lecture I pointed out that the perceived world of our experience is in ultimate analysis a psychological world of interest and values—in other words a world of personality. On the other hand it is certainly not a world of mere individual personality. Psychological observation reveals to us no such world. I then pointed out that we reach the scientific conception of a physical world by a process of abstraction from psychological apprehension, and

that by the help of this process of abstraction we are enabled to extend enormously our powers of prediction where fuller apprehension is lacking. The physical world remains, nevertheless, a world of abstractions; and if we endeavour to apply ordinary physical conceptions to the phenomena of life the unreality of these abstractions becomes so evident that they are of only limited practical service. In connection with the phenomena of life we have therefore to make use of a less abstract working hypothesis, the conception of life as an organic unity manifesting itself in space, though not in time.

The conception of life represents something intermediate between the physical and psychological conceptions of experience, and has the same use as the physical conception in helping us to predict and control events. It helps us, for instance, in prediction about Locke's secondary qualities and about innumerable biological phenomena, and it furnishes a scientific basis for practical medicine. Nevertheless biology is, like physics, an abstract science. It deals with abstractions from psychological reality, and we can no more base psychology on biology than on physics, since biological conceptions, like physical conceptions, are only abstractions from full psychological experience.

Psychology itself rests on observation of psychological experience as such. This observation shows us that a human being is no mere aggregate of cells or atoms, no mere living organism, but a person; also that he is no mere individual person, but even to the innermost recesses of his being belongs to a wider personality manifested in the society in which he has grown up. But is it not evident, it may be asked, that psychology depends

upon the brain, not to mention such organs as the kidneys or thyroid gland? A person, for instance, whose cerebral circulation has become defective becomes also mentally defective, and if he has lost his thyroid gland he becomes an idiot unless he takes thyroid extract constantly. The dependence of the mind on the body is surely evident in a thousand ways?

This reasoning appeals to the multitude, and is most useful for immediate practical purposes, but is quite misleading in a wider philosophical sense, since it is based on the unfounded assumption that mind and body are two independent things, instead of the same thing looked at from different points of view. Our bodies, interpreted physically, or even biologically, are only abstractions from psychological reality. We can regard a man abstractly as a mere body in the physical sense, or as a mere living organism, and for the immediate practical purposes of medicine the latter abstraction in particular is most useful and fruitful. But to argue that a man's personality depends on his body amounts to maintaining that he depends on what is only an abstraction from himself. This is simply unmeaning. A man's body or organism is only his personality regarded abstractly or partially, just as his individual personality is his personality regarded abstractly. For many practical purposes it is most useful to regard a man for the moment as a mere physical body, or as a mere living organism, but this is only a partial interpretation. To any doctor who is representative of the traditions of his profession a patient is no mere piece of machinery, no mere living organism, no mere separate person, but belongs to his own interests because these interests embrace those of

his fellow men. The patient is a neighbour whom he is specially called on to help, and not a mere scientific abstraction. It makes no difference in this respect whether his patient is suffering from a broken limb or from some more subtle disablement involving mental and moral characters. The work of a doctor comes sometimes very near to that of a clergyman, and particularly in connection with what is distinguished as psychological medicine, but is different. It is from the standpoint of the sick organism of his neighbour that he is called on to act.

In the investigation of conscious physiological responses we can for the moment neglect altogether the specific characters, already referred to, of psychological phenomena. A conscious response is then treated as simply a physiological response. Surely the branch of science which goes by the name of physiological psychology, and which is built up on this basis, belongs to physiology and not to psychology? Physiological psychology as commonly taught seems to me to be also, to a large extent, only rudimentary physiology, since it is mainly based on a merely mechanical conception of the nervous system, as if the latter were simply comparable to a complicated system of telephone wires and automatic exchanges. Such a conception represents only rudimentary physiology, because it takes no account of the fundamental physiological facts relating to organic regulation or integration. The whole body of these latter facts comes, in consequence, to be relegated to what is regarded as an unconscious mind, since we are unconscious of organic regulation.

For want of an adequate physiological conception of

the nervous system there has thus arisen what seems to me a confused pseudo-psychology of the unconscious, like Stahl's animism. There is also no satisfactory basis for the pathology and therapeutics of nervous affections which cannot be attributed to gross structural lesions. With a more adequate physiology of the nervous system these confusions will, I feel confident, disappear, and a very important branch of practical medicine will take its true place on the same theoretical foundations as other branches of medicine

My conclusion is that the relation of psychology to biology is the relation of a less abstract or partial form of knowledge to a more abstract form. It also seems to me that psychology, though the least sharply separated off, is the most important form of knowledge, and that instruction in it is of overwhelming importance in education.

Why, then, one might innocently ask, is it not taught in schools, or even to teachers, except perhaps as so-called physiological psychology? The real answer is that good schools and good teachers teach it everywhere and at all times, and teach it, moreover, practically, and particularly by example. The whole of the moral, literary, and humanistic side of education represents psychology, and even in the teaching of natural science psychology is present in the form of scientific history and in other ways. The really good school or university is that which teaches practical psychology well, and the teacher who cannot teach practical psychology, whatever else he may be teaching, has missed his vocation. Psychology deals, not with ordinary scientific abstractions, but with living and concrete personality which is more than mere indi-

vidual personality. It deals with the interests and values which express themselves in conscious behaviour ; and these interests and values cannot possibly be dealt with in terms of physical, or even biological conceptions, which are inadequate to express the facts

I have tried to distinguish psychology from a good deal that is commonly mistaken for it, and to indicate its true relation to biology and other branches of knowledge. In conclusion I should like to emphasise my conviction that if, neglecting Hume and Kant, we start from the assumption of a real physical world of self-existent things, we can get into nothing but confusion over the relations of psychology to biology and physics.

The confusion is not a mere abstract scientific one, but affects practical affairs at every point. In the so-called realism cropping up everywhere in contemporary literature and popular science this confusion seems to me rampant. By all means let us be realists if by realism we mean regard for truth ; but surely we must first decide as to what is, or is not, real ? The uncritical assumption that the world as interpreted for purposes of immediate and limited prediction by the physical sciences coincides with reality is to my mind nothing but an obsolete belief which is entirely foreign to the untrammelled spirit of science. The popular literature which is at present spreading in every direction the doctrine that whatever else may be real or unreal physical conceptions represent reality seems to me to be quite ephemeral. Physical and biological interpretations are nothing but ideal abstractions from psychological interpretation, though often they are, for immediately practical purposes, the only interpretations that can be applied in detail. It is only a world inter-

preted in the light of interests and values that is consistent with itself and therefore real in the only sense in which reality has any meaning.

Various writers have indulged in speculations as to future human development. I venture to add to their number by prophesying that future generations will look back with amazement at the complacent physical realism of our time, with its corresponding naive belief in what machinery and knowledge of Nature's supposed machinery can do for humanity. It certainly is not along the pathway of mere physical realism that we shall advance towards higher stages of civilisation.

II

PSYCHOLOGY AND ANTHROPOLOGY

By R R MARETT, M.A , D Sc.

IN theory, and by right of its etymology, anthropology has to do with human beings in general, with mankind including womankind—a perturbing subject, as a French lady once put it to me. In practice, however, it has hitherto been chiefly concerned with the so-called primitive kind of man. The reason is not far to seek. From the time of Herodotus onwards, indeed, there have been observers whose interest was more or less co-extensive with man universal, though for the most part their accuracy fell so far short of their zeal as to cause us to reflect that in Greek ἀνθρωπολογία is the nearest equivalent to our word “gossip.” But anthropology did not become a recognized branch of science until Darwin had revolutionized biology, incidentally postulating as he did that the human species is no more exempt than any other kind of living thing from the laws of organic development, or, as Herbert Spencer was the first to name it, evolution. Just about the same time, too, archæologists had at length become convinced of the authentic existence of quaternary man, the contemporary of the mammoth. In these circumstances anthropology was naturally conceived as a science of human origins. For the rest of the nineteenth century at all events the anthropologist was

almost exclusively concerned with the embryology of man—with all such conditions and states as may be supposed to have preceded his birth as an evolved, that is a civilized, being

Now it would be at once ungrateful and unjust to decry the work of the great pioneers of anthropology. Since all science advances by a method of trial and error, we stand to gain hardly less by their unsuccessful than by their fortunate experiments. But, fuller evidence having been in the meantime accumulated, we can see now better than they could in their day that human evolution is a very complex process. It is not, as they were inclined at the outset to assume, something comparable to a single chain of events, having its links joined to one another in an order holding good for the human race as a whole. Rather, as we understand it now, it is to be likened to one of those live ropes of interlacing and even interbreeding creepers that are to be seen in any tropical forest. The metaphor of the man-made chain, so satisfying to the logical fancy which craves neatness and simplicity at all costs, must give way to another more expressive of Nature's profusion, a profusion spelling sheer confusion for any logic that will not submit to the discipline of fact

How, then, did the anthropologists of the past generation proceed to forge their evolutionary chain? The archæological record was at the time too fragmentary to provide a sufficiency of such links as they needed. So they had recourse to the study of certain "living fossils," as they roundly declared them to be, namely, the very various peoples of a more or less simple type of culture whom we are wont to lump together under the name of savages, that is literally,

men of the woods. Now just as these existing peoples are of a simple habit of life, so undoubtedly must also have been the men of the far past, to judge from their unpretentious remains. But if, thanks to Nature's profusion, there are very many possible forms of the simple life, it will not follow that any one modern form repeats an ancient in all particulars or even in essentials. Still less will it follow that the modern form is not so much a repetition of the ancient one as a direct continuation of it, a survival, a fragment of the past that has somehow managed to last on. Rather the known facts point to the conclusion that all human institutions, whatever their type and grade, are perpetually in a state of flux, that changes of some sort, whether ups or downs, mark every moment of their history. Hence a living fossil is a contradiction not only in word but in fact. Fossils cannot be ranged neatly in a row if they are addicted to vagrant locomotion on their own account. It is not surprising, then, that the working hypothesis of the chain, or, to speak more technically, the presupposition of a unilinear evolution, should have been finally abandoned by the serious student of man, though it may be that there are popular writers who still rejoice in the notion.

Meanwhile, the most recent research has marvellously enriched our knowledge of prehistoric times, so much so, indeed, that we are now a good deal better informed about Pleistocene, at any rate, Late Pleistocene, conditions in Europe than about those immediately preceding the dawn of recorded history. Thus there is far less need than formerly there was to reconstruct the ancient savage out of the modern, to eke out our account of the genuinely old by drawing on what at

most is but the seemingly old-fashioned. Prehistoric man to-day stands firmly on his own feet and needs no exterior prop. The facts relating to him are so numerous and precise that we can well-nigh dispense with questionable analogies. Nay, we know enough about certain types of ancient man—as, for example, about Cro-Magnon man and that Aurignacian-Magdalenian culture for which he seems to have been chiefly responsible—to be sure that neither physically nor culturally did he closely resemble any existing type. Of his culture in particular the unique character becomes ever more apparent as daily discoveries deepen our sense of its exceeding complexity—a complexity which, by the way, is clearly the outcome of a long process of development, such as carries the imagination on beyond Europe to remoter regions whose surface archæology has barely scratched with its spade.

In these circumstances the modern savage tends to find himself out of employment. Living fossils have become a drug in the archæological market. Hitherto he has shone with a reflected glory, deriving from his association with prehistoric man a share of that glamour, that twilight mystery, which is the secret of the appeal of the truly ancient. But henceforth he must make out a claim to be worth serious study in and for himself. Consequently the present generation of anthropologists pays little heed to those questions concerning the ultimate origins of culture that agitated their predecessors. They do not any longer expect to discover in the Australia or the Melanesia of to-day the archetypal rudiments of religion, law, morals, marriage, and so forth. On the contrary, they are more than content if they can trace the history of each primitive society as

it now is for even one stage backwards in time ; nor are they at all put out if this previous stage as compared with the present turns out to have been the more complex of the two, that is, of the more advanced evolutionary type. On the other hand, it can hardly be contended by the most enthusiastic compiler of such brief retrospects into the life of obscure peoples that their intrinsic interest is great. Moreover, regarded as history, these accounts suffer one and all from a dearth of solid evidence whereby to verify the innumerable hypotheses forming their airy tissue. It is true that the more or less specious appearance of a major movement of history can be produced by mixing together a sufficient quantity of such hypothetical accounts, more especially if these have been constructed with such an ulterior purpose in view. But a good omelette is not to be made out of any number of doubtful eggs.

I propose, then, to show that there is another and better way of investing the study of the modern savage with an interest of its own. Let me apologize at once if in order to exalt one method I appear to have unduly vilified others. By all means let us make full allowance for a plurality of methods in our scheme of anthropological studies. There ought to be plenty of elbow-room available in this vast field for the all-too-few workers. But let me at least insist that free scope should be afforded to the student who is, so to speak, ready to take the modern savage at his present value. I want him to be understood as he is rather than as he may have been once upon a time. In the former case you are at any rate dealing with something concrete ; in the latter case you are considering an abstraction, and very possibly a false abstraction. To speak

figuratively, when you find the child of nature garbed however unnaturally in the cast-off breeches of civilization, describe him breeches and all. It is tempting no doubt to get him to pose to your camera in what you suppose to have been his original state. But material obtained in this way, even if useful for the purposes of the cinema, can hardly help to shed the light of science on the pre-sartorial stage of human evolution.

The next point that I wish to make is this. If the savage is to be taken at his present value and studied just as he is, psychology must take a leading hand in the rubber. Since it is sought to understand the life of a given people not in one aspect only—namely, that aspect in which it appears wedded to an obsolescent tradition—but concretely, that is to say, in all its aspects taken together, our interest must throughout be directed towards that unifying process which causes the people in question to feel, think, and act as a social group. This unifying process is often termed the group-mind. For myself, I prefer to believe that mind in the strict and literal sense is the private possession of the individual. But since the results of the interactions of minds are most naturally conceived in mental terms, that is, as if they existed for a single transpersonal mind of a somewhat disintegrated type, I raise no objection to the use of the group-mind as a methodological convenience. Indeed, whether we explicitly postulate a group-mind or not, we can hardly do justice to the central process which makes a human society organic and alive unless we describe it in the language of psychology. I am indeed aware that a new philosophy is coming into vogue, which calls itself Behaviorism, revealing its place of origin by the suppression of the *u*.

Such a philosophy, I understand, bids us rigorously abstain from introjection or mind-reading, and have regard only to behaviour, behaviour being plain to view whereas all motive is hidden. Seeing, however, that, behavioristically as otherwise, this country remains for the present outside the prohibition area, I trust that a moderate indulgence in psychology as applied to social science may still be tolerated here.

Before proceeding, however, to consider how psychology may be used to explain the social life of the savage, which is the side of the subject in which I am personally most interested, let me shortly notice ways in which the psychology of the individual mind may likewise become an instrument in the hand of the anthropologist. By observation and experiment—and preferably, of course, by the latter means—we can hope to measure the mental capacities of all or some of the individuals composing an ethnic group, which if of the simplest type may be very small, numbering let us say a hundred souls or less. Something of the kind was done by the Cambridge Expedition to Torres Straits, at all events as regards the study of the sensory powers of the natives. So far as these experiments might have been expected to show a marked difference between wild folk and civilized folk as to sense-endowment—for instance, in respect to acuity of vision—the results were largely negative. In other words, it turned out that, whereas experience might teach the savage to interpret his sensations more accurately than we should in contexts more important to him than to us, the actual sensations were much the same in both cases. Even so, however, it would be exceedingly rash, in view of the paucity of sound evidence bearing on this topic of the comparative

abilities of persons of diverse race, to dogmatize on the question whether man is, or is not, fairly uniform in this matter of the inborn quality of his mind. A task open to the psychologist is to instruct those teachers of the young who have to do with sharply contrasted races how to provide him with data that shall enable him to assess the kind and degree of intelligence manifested on the average by each type of child. I am not quite sure, indeed, whether the psychologist is in his own mind quite clear about the methods whereby such an enquiry should be conducted, but I have no doubt that somehow the thing ought to be done. Thus I am constantly coming across literature that purports to deal with ethnic psychology, yet never have I been able to reach firm ground when tempted to pursue this phantom science. From the purely practical point of view the world needs to be informed how far all sorts and conditions of men can be credited with a common capacity for civilization in such a form as will promote free intercourse on one and the same spiritual plane. Moreover, practical considerations apart, this is something in itself well worth the knowing. Let the psychologist, then, as best he can devise tests of what I may call general educability. Thereupon some sort of wide-world census might be instituted to show what innate capacity, as distinguished from acquired habit, amounts to in representative members of the different racial stocks. Of course emotional as well as purely intellectual qualities would have to be taken into account in assigning to each breed its special portion of inherited propensities and aptitudes. And having said so much I leave a side of the subject about which I have little if any authority to speak. I have but tried to indicate

in passing that it is for the student of the psychology of the individual to examine as best he may be able the congenital element in man, the state of culture being irrelevant from such a point of view. On the other hand, as I shall now proceed to show, it is for that other branch of psychology known as social psychology to study the acquired element in the human mind, inasmuch as social life is the supreme condition that determines the formation of all our habits.

Now, as I have said already, when we study the savage from the standpoint of social psychology, we must be prepared to take him as he is. Our interest must relate impartially to all that he feels, thinks, and does as a social being. Not part of his custom only, namely, the part that looks old, but all his custom must equally concern us in respect to its mental aspect. We are not to be mere fossil-hunters, mere seekers after survivals. On the contrary, we have to take due note of the fact that the so-called survivals somehow do survive, that, for all their ancient and effete appearance, they continue notwithstanding to belong to the present. Dying they may be, but certainly they are not dead. Moreover, as every student of folklore knows, they may merely be "shamming dead," seeing that from survival to revival is often but a step. It comes to this, then, that for the purposes of social psychology every manifestation of the social life alike is conditioned by an active process. Which process is most suitably conceived in terms of mind and will, inasmuch as it is essentially a selective process—a mode of experience, which is to say experimentation. Thus it is in my opinion all-important that the various workings of what may be called the customary sanction

should receive a psychological interpretation. To think of a body of custom exerting pressure by reason of its dead weight would be fatal. We should be tacitly committing ourselves to a theory of mechanical causation, whereas, in order to do justice to the facts, we need a vitalistic category—one that shall express the operation of a moral force, such as sways the minds of men by its inward appeal.

In what follows, then, I propose to examine briefly the nature of the moral force known as custom, or social tradition, in so far as it displays certain peculiar features under the relatively simple conditions of savage life. With certain misgivings I shall pursue the usual method of drawing a more or less sharp contrast between the mental atmospheres which uncivilized and civilized folk respectively breathe. I have misgivings, as I say, not only because generalization on such a vast scale is bound to be precarious, but likewise on the even more serious ground that comparisons between ourselves and our neighbours serve mostly as a cloak for self-conceit. But anthropology as science stands for even-handed justice. It is the mark of a crude evolutionism to assume that more complex stands for better all round. So let us as far as we can be content to note that the mental life of the simple society is different from that of the complex society, without being necessarily better or worse on that account. Every one of us is after all a potentiality of opposites, and so, I daresay, the average man or woman if caught young enough and duly indoctrinated in the tradition of any society, small or large, rudimentary or advanced, would cheerfully accept the prevailing point of view, and would thereupon be

ready to regard the rest of the world as 'his moral inferiors

What, then, can we say in general about the mental effect on the savage—or, if we like so to put it, on any one of us brought up in similar conditions—of living in some small, isolated group having few and feeble arts, as for instance one that subsists entirely by the hunting and gathering of wild things? The matter may be discussed under two heads, the former of which need not occupy us long. First the force, and afterwards the quality, of the moralizing agency will have to be considered

To begin with, then, as regards the force, all that need be said is that orthodoxy reigns supreme in savage circles. To be unfashionable in conduct or opinion is to be lost alike to shame and to reason. The individual dares not call his private soul his own, because the public and communal soul is so authoritative and all-sufficing. Cheek by jowl with his fellows as he is all day and all night, he must keep step if he will not be trampled on, and so must submit to the rhythmic discipline of the chorus. Such submission is in large part the result of natural inclination. A form of life consisting in a sort of perpetual folk-dance is not without its attractions. Savage socialism is something that sings in the head. Like the sailor's chanty a traditional tune, as we may say, forms the soul of the social movement, of every kind of concerted effort whether work or play, war or festivity. Once the habit is formed of keeping time, the inward benefit in the way of modulated emotion, deepened insight, concentrated energy, is manifest to the performer, and not so much by willing as by yielding, namely, by sheer

imitative abandon, he becomes wholly possessed by the music to which he marches. Let it be added, however, that his submission is also in part the product of an external coercion. The older generation plays dancing-master to the younger, and, in view of the rough handling normally experienced by the novice at initiation, might be said to play drill-sergeant into the bargain. Thus the wildest of wild-folk individually undergo a modicum of taming such as permanently tempers their regard for tribal use and wont with an element of wholesome fear. Beneath a surface show of acquiescence verging on automatism a system of restraints is at work, and one that is active not only while the individual is immature, but likewise throughout his adult career. It is true that the group does not often have recourse to actual punishment, neither the criminal nor the social reformer—those two types which it is so hard in practical politics to distinguish—being numerous enough to cause serious offence to the conformist conscience. But law is none the less law because it is obeyed. In the simpler societies, the individual is as normally subject to external pressure as is a deep-water fish. When, therefore, popular writers discoursing in psycho-analytic vein speak of the savage or the cave man that lurks in the depths of the civilized soul, the phrase is ludicrously inapt. For the real savage of to-day—and I have no doubt that the same held good of the ancient cave man—is not so much the antithesis as the embodiment of conventionality. The so-called child of nature is far more easily shocked than we are. He is a purist who puts manners on a par with morals, and rates impropriety as equivalent to sin.

So much, then, for the force, as distinguished from the quality, of the social mind or will that, operating through a set of traditional customs, provides the unifying principle in primitive life. Enough has been said to show that, in respect of its compelling power, it exceeds any socializing influence to which the civilized man is called on to respond. Just because life is so simple and so much the same for all, duty becomes drill, and drill becomes second nature. Our much larger, but correspondingly much looser, organizations have, however, this advantage over the homogeneous and so-to-speak unicellular type of society, namely, that they permit in far greater degree of progress from within. So accustomed are we to the modern conflict of tendencies, the daily and hourly clash of ideas, that perhaps we scarcely realize that the mainspring of our civilization is a polite kind of civil war. The savage, on the other hand, being more or less fatally committed to a single system, experiences progress, if at all, mainly in the form of progress from without. I say "if at all," because too often he and his system go down in ruin together. Meanwhile, the progress which anthropologists describe by the colourless name of culture-contact normally amounts to the systematic exploitation of a weaker by a stronger people, whence it happens that for the less favoured party to the transaction the next step forwards is usually a step downwards as well. The moral would seem to be that socialization, at all events as carried out on a very limited yet intensive scale, may be too effective—that the most absorbing of organized folk-dances may prove depressing in the long run, if no one is allowed to cut occasional capers on his own account.

It remains to consider the mind or mentality embodied in primitive custom in its qualitative aspect. From our point of view the ways of the savage are apt to seem absurd. Nay, not only is there a want of meaning in them when we undertake to play the interpreter, but the savage himself when interrogated by us seems incapable of justifying them on any intelligible grounds. It is for the psychologist, then, to try whether he can account for the discrepancy between this apparent senselessness of theirs and their manifest usefulness as a means of survival. Has human life in any form a right to laugh at logic? If our logic is the only logic, and the savage has little or none of it, then is not his existence a sort of standing insult to reason? Now the psychologist as a man of science has a great respect for that which exists. He would therefore bid reason either pocket the affront, or come to terms with a type of human existence which is a hard and abiding fact. In other words, he must be prepared to say either that man can do without rationality, or that there are more ways of being rational than one. Adopting the latter alternative, the psychologist distinguishes two outstanding modes in which reason, or directive intelligence, is wont to function. One of these is reflection, or discursive apprehension, the other is intuition, or massive apprehension. Now logic in the usual acceptation of the term essentially relates to such mental processes as culminate in reflection. So far, then, as savages reflect—and of course they do reflect to some extent and after a fashion—they are amenable to the rules of logic, and the value of their efforts to think must be appraised accordingly. But far more characteristically the primitive mind relies on

intuition All of us, of course, use intuition every day, more especially in practical life ; but for better or worse its influence within civilization is secondary to that of reflection

Intuition is the sense of the altogether. It is the faculty of grasping things wholesale instead of bit by bit Since, therefore, the several natures of the parts are not separately considered, their effective connexion here and now prevails over any latent tendency they may have to break away from each other For intuition, the mystic, marriage is marriage , whereas reflection, the match-maker, is aware of the possibility of divorce

Now it is not hard to understand why the members of a small and simply organized society should tend to think massively, should entertain many-sided notions which from our point of view are decidedly mixed After all, the savage might retort that we too mix things up which to his mind seem quite different I have been told, for instance, that an Eskimo can detect and name a hundred distinct varieties of appetizing flavour in specimens of blubber which the indiscriminating white man would class together as merely putrid Let it be granted, however, that what has been described as "confusion of categories" is a leading feature of primitive thought as viewed from our standpoint. This merely means that notions designed for a strictly local use will serve their purpose although invested with a fringe of no less local associations as part, and even chief part, of their meaning Features that would be accidents for an outsider remain essentials for the man who is at home among them and knows them chiefly by their homely feel Thus the

sentimental value, as it may be called, of the things that form the petty yet none the less precious surroundings of the savage is apt to overshadow their objective value, that is to say, their currency value in the intellectual market of the wider world. Good totemism makes bad natural history as we understand it, yet what is true for the totemite may be the only truth that immediately matters. Not but what I suspect the savage to be capable, very much as we are, of keeping his sentiment and his science apart in logic-tight compartments. As a hunter he observes the habits of game very closely, yet as a worshipper he attributes to the same animals powers wholly transcending those that they display in the field. Even so, however, I have no doubt that, whenever the two systems come into direct conflict, and he has to choose between the evidence of his senses and the appeal of his feelings, sentiment, not science, carries the day. For it is far more important for him to be in touch with the moral than with the mechanical forces that make up his world. He gets further by cultivating friendliness than by chipping flint or carving wood. In other words, he succeeds in the struggle for existence not so much by manipulating matter as by disciplining and attuning his soul to sympathy and communion.

But some hard-headed critic will object "With all respect to your noble savage, let us get back to the indisputable fact that his thought is a tissue of absurdities." To this, I suppose, the psychologist is entitled to reply that, if one could project oneself into the thick of that thought, it would not seem absurd at all but perfectly natural, that is to say, perfectly appropriate to the vital needs of the moment. For the supreme

working principle of psychology is this : to endeavour to understand every phase of human experience from within itself—or, to put it more technically, by means of an immanent criticism. Applying such a principle to savage thought, and more particularly to that typical form of it which appears to us to subordinate fact to fancy, we can extract sense out of seeming nonsense by realizing that, whereas reflection uses ideas, intuition uses images in the representation of moral values. In other words, it is the concrete, not the abstract, type of symbol that best suits the primitive mind when it seeks by way of massive apprehension to assess the true worth of sympathy and communion. So to speak, a mirror is required in order that the spiritual meaning may be pictured, and, so long as the mirror answers this purpose, it is irrelevant what its material constitution may be, whether it is a natural object such as a quiet pool in a stream, or an artificial object such as a polished glass. Now every one knows that the savage is wont to read sympathy and communion into a host of objects, natural or artificial, which in the eyes of the positivist are devoid of moral quality of any sort. Sympathy and communion form a double thread of meaning running through the entire texture of what is sometimes called his religion and sometimes, more disparagingly, his magic. For him all nature echoes the refrain of his choric song of life, "Let us join hands and help."

Is, then, savage symbolism futile? Surely not, except—and this holds of all symbolism—in so far as it is misunderstood. That we are exceedingly likely to misunderstand the symbols of the savage—we who are for the most part utterly without a clue to the local

associations in which the things supplying his images are steeped—goes without saying. But the only question in point here is whether the savage misunderstands himself, whether he falls into what may be called the symbolist fallacy, which consists in taking the symbol literally, of confusing the doll with the real baby. Now from the practical point of view no harm is done if one treats the doll as a baby, so long as one does not go on to treat the baby as a doll and, let us say, deprive it of its dinner. That the savage plays dolls with conviction must be admitted, that he uses symbols to stimulate his own lively feelings until the symbols themselves seem almost alive. But can it be proved that he is thereby led to handle a live situation as if it were a puppet-show, to rely on agreeable pretence as a substitute for tiresome duty? Perhaps to some extent it can. But I believe that on the whole he can be shown to confine his use of symbolism to contexts in which it is either helpful or at least harmless. For I should like to call attention to a fact well-known to anthropologists, namely, that the world of the savage consists of two hemispheres, one half being, to use his own terms, profane and the other half sacred. Correspondingly, then, so far as his life consists in the day's work, the savage tends to be literal-minded; but so far as it consists in ceremony, he can afford to be symbolic-minded. Indeed, in some primitive societies, though perhaps not in all, the transitions from the one condition to the other are so well marked by means of customary observances, such as the so-called *rites de passage*, that there can be no excuse for anyone to confuse the poetry with the prose, the dancing with the doing mood.

So we reach by another path the view to which we

already inclined, namely, that the savage manages on the whole to keep his sentiment and his science in separate compartments of his experience. He can distinguish the kangaroo of the dance from the kangaroo of the hunt. The one feeds his soul and the other his belly. And it is the former only or at any rate chiefly that has, as we say, supernatural attributes, standing for something over and above mere nature in the sense of the food-value which the beast represents. Nay, in his effort to uplift the matter to the plane of the symbolic, the totemite formally negates the food-value. For profane purposes the kangaroo may not be eaten by him, though without inconsistency he allows it to provide the material for a symbolic meal whereby a human brotherhood reinforces its sense of communion. For the rest of the tribe, who worship other totems, let kangaroo mean mere butcher's meat, since theirs is the profane and literal way of looking at it. But for him, the totemite, kangaroohood is brotherhood in the only sense that counts among initiates, seeing that kangaroo is their common name, their social essence, their luck, their mystery, in a word, their sacred dance. It is in truth somewhat remarkable how, throughout its wide range, totemism provides us with so few examples of the mistake of insisting on the symbolic meaning in a context where the literal meaning is required. Thus we rarely hear of the totemite objecting to what another man, not of the totem, may do to the animal that is for himself so sacred. Such conduct he does not hold to be wrong, because he perceives it to relate to another meaning—one that has nothing to do with his own ceremonial mood. Here, then, is one way of showing that savage intuitionism, however confused

it may be, does not utterly fail to distinguish between idea and image—between the moral significance attaching to the symbol and the physical significance belonging to the same thing when taken simply as a fact.

Another way of showing this is as follows. It is certain that savages consciously aim at producing in themselves by means of their ceremonies a certain frame of mind, a certain spiritual condition. Of course they expect material advantages to follow as well. But for the most part they seem distinctly to recognize that the material benefit is consequential and the spiritual benefit intrinsic. *Mana*, or grace, is that within a man which inspires him, raises him to a higher power, endows him with such virtue as passes ordinary nature. It is true that the savage is apt to say that *mana* resides in the ceremony, but this is hardly more than a way of putting the fact that the ceremony is a means of grace. Just so we call fire hot because that is what it makes us feel. At most we may conclude from this habit of attributing *mana* to the symbol that the savage is what in modern parlance is known as an extravert. He looks outwards to things so much, and inwards to the state of his own mind so little, that the outwardness of the things appears to attach to those feelings excited by them which are most his own, his hopes and fears, his desires and resolves. This tendency to objectify his feelings is, moreover, greatly strengthened by the fact, of which we have already taken note, that they are almost wholly group-feelings. The *mana* sought and obtained by way of the public ceremony is a grace for all, so that the means of grace, the grace-imparting symbol, must necessarily consist in something external to which all can look at once. Meanwhile there is good

evidence that the savage, even while he tends to place the *mana* in the symbol, does not on that account regard it as a permanent property of the thing. Much has been written about the primitive doctrine of the transmissibility of *mana*, the contagion of holiness. It is a balm that can be transferred from one vessel to another. Moreover, all sorts of vessels may be used together, their size and shape being indifferent so long as they yield their quota of the precious medicine. A savage ceremony often strikes us as wanting in dramatic unity of any kind—as being, in fact, a sort of tribal nightmare translated into gesture-language. Now I would not go so far as to say that the incoherencies of dream or trance do not sometimes find their way into primitive mythology and ritual. But in such a context the psycho-analytic school should at least be aware of the counter-contention of the ethnological school, which insists on what I might call the salad-theory of culture. A ceremony, according to the latter view, may well be a compound of ingredients culled from many quarters. Certain it is, at all events, that savages are fond of incorporating in their rites all manner of contributions from alien sources. Thus it is notorious that the missionary's difficulty is not so much how to persuade them to adopt the new forms of religion as how to make them understand that the old forms will no longer serve their purpose as before. "The more forms, the more *mana*" would seem to be the primitive creed, and the inference is that, however obscurely, the *mana* is perceived to be independent of the particular nature of its vehicle.

Though there are many other aspects of the subject on which I could descant, it is time to bring to a head

what I have to say upon the topic of the quality of savage thought. If I have seemed to argue on the side of the defence, it must not be therefore supposed that I put primitive science on a par with our own. A narrower experience is bound to afford a weaker hold on the nature of things, though indeed I believe that in this department of his thought the savage demonstrably relies on the same logical principles, the same method of trial and error, as does the civilized man. Here, however, I have paid attention rather to that other department of his thought which is concerned with what some call his magic and others—I think, more suitably—his religion. It is here especially that his thought appears to some to be utterly wanting in logical quality. My reply to this accusation amounts to this—that the psychology of symbolism bids us be cautious in judging of the quality of the logic of the symbolist. Before we judge the logic, we must have got at the meaning, and the literal meaning of a piece of symbolism is never the right meaning. The usual charge against the savage amounts to this, that he is bound to think inconsistently because he thinks in metaphors, and mixes his metaphors into the bargain. This view is unsound, because it mistakes the grammar for the sense. I do not deny that correct grammar makes for sound sense; but I deny that the two things cannot exist apart from each other. In short, I am prepared to contend that there is a fair coherency of meaning in primitive religion despite the bewildering incoherency of its forms. And, after all, in religion, only the sense counts. How can it matter in the least whether a man talks grammar to God?

It only remains to add that it is possible to play as

well as to work with symbols, and that the same symbols may serve both purposes. Now religion may be described as spiritual work, whereas spiritual play largely consists in fine art. In the latter sphere meaning is of less importance, and attention concentrates on style. Correspondingly the objective nature of the symbols employed has to be more carefully considered, and one may almost say that their figurative value is determined by their face-value. Now it is to be suspected that a good deal of our misunderstanding of the thought of the savage is due to failure to enter into the spirit of his fun. We confound sport with superstition, magic with merriment. In truth it is often hard to discover the exact point at which grave passes into gay, the sacred dance into a festive corroboree. The difficulty is all the greater because the study of origins makes it probable that most of the finery of art is fashioned out of the discarded vestments of religion. Nevertheless, be the test easy to apply or not, it is only fair to judge a meaning in so far as it is seriously meant. Play of fancy obeys laws of its own, namely, certain canons of taste; but they are not the laws of logic. Let the logician, then, pronounce on the quality of savage thinking after a full psychological preparation that shall enable him to get past the language to the sense. If there is sense in believing in brotherliness, and in believing in the efficacy of common worship to bring it out in each and all, then why make the symbolic nature of that worship an excuse for calling it a tissue of absurdities? Physical truth is the outcome of long and laborious investigations, and mankind will, I suppose, go on inventing fresh machines till the end of time. But moral truth, fortunately, is more a matter

of plain common sense. In the simple society they know by intuition that goodness is loving-kindness , and I am not sure that in the complex society, despite the aid of reflection, we know it any better.

III

PSYCHOLOGY AND LOGIC

By F C S SCHILLER, M A , D Sc.

THE motive which has inspired all these Lectures is, I suppose, the desire to improve the relations between the sciences. We have had floating before our eyes Utopian visions of a harmony, in which they all, old or young, affable or exclusive, pushing or retiring, can live together in fraternal co-operation and a sort of unity conducive to the good of man. We all realize that such ideal conditions do not exist at present, but we believe that their relations can be improved, and (incidentally) that we are the men to do it. We hold this faith, though to a censorious eye the sciences seem to be very remote from any concord. Instead of co-operating they are too often raiding each other's territory, instead of agreeing they are dissenting in a babel of discordant tongues, and even in their internal politics they display but little unanimity. Many of them, and notably theology, ethics and psychology, seem to be essentially medleys of discrepant schools and points of view that carry on their intestine conflicts from age to age.

In Psychology, for example, there exist at the present moment, not less than nine distinctive and antagonistic schools that must be reckoned with. We must recognize : (1) Faculty psychology, and (2) Associationism,

antiquated schools, no doubt, but imperishable so long as Aristotle, Kant, and Hume retain admirers. Belief in introspection generates two schools; (3) the Mechanists, who can trace their philosophic pedigree to Descartes and claim support from the method of the physical sciences, and (4) the pure introspectionists, who are not wedded to any metaphysical dogma. The attempts to introduce experimentation into Psychology in various ways accounts for numbers of schools—such as (5) the ‘exact’ or laboratory experimentalists, (6) the Behaviourists, who declare consciousness a needless complication, because it cannot be observed (and is not, apparently, required in the observer!) and (7) the Psycho-analysts of the Freudian and other brands, who recognize that even a ‘pure’ science must have applications and have conceived the noble ambition of testing psychological theories by applying them to the practical problems of mental disorder. Finally there are two schools (with whom I must confess my own sympathies to lie), viz., the psychologists who cannot see why to be ‘scientific’ it should be necessary (8) to misrepresent the facts and to abstract from the purposive or teleological character of the mental life we actually live, or why (9) it should be assumed that all the powers of the soul have been so completely explored, and all its effects upon the body so perfectly explored, that it is safe to reject *a priori* all the evidence which points to possible extensions of every-day experience in the direction of the supernormal and transcendent. I am aware of course that to suggest such possibilities is to endanger one’s reputation for orthodoxy, and even for sanity, but it is comforting to think that a ‘heretic’ is only

one who *chooses* to think for himself instead of following the fashions, and that in Professor McDougall now, as in William James of yore, we have a psychologist of unquestionable eminence who is willing to support both these 'heresies' For the same reason I am glad also that Dr Mitchell has consented to participate in these Lectures with a discussion of the bearing on Psychology of Psychical Research.

But should not these differences, this multitude of competing psychologies, be deemed fatal to the claims of Psychology to be a science, to the hopes of inter-scientific amity, to the ideal of an all-embracing League of Sciences, presided over by Philosophy, of which the members had abandoned all ambition of selfish self-aggrandisement, and were willing to develop such conceptions of their function and such methods of work as were conducive also to the advancement of their neighbours? I will make bold to answer confidently, *No*! For a science should be a method not a dogma, an exploring expedition into the unknown not a sessile tyranny, a market-place stocked with goods for the service of mankind, not a battlefield on which human values are destroyed, errors are slain, and truths are slaughtered for the greater glory of the Absolute. Moreover in the testing of scientific hypotheses, as in war, there is safety in numbers. The more numerous and various our attempts, the more likely are we to succeed, and it is only by bearing the largest number of alternatives in mind that we shall give ourselves a chance of observing the *best*.

It is only by such unremitting self-improvement that any science renders itself worthy of entering the comity of sciences. But when all have become worthy, there

is no reason why the sciences should not form a happy family, and none should be more capable of contributing to the general happiness than Psychology. Before that happy day arrives, however, it will be necessary to make up the quarrel which exists at present between Psychology and Logic. For this both sides have been to blame, but it would be, I believe, the making both of Psychology and of Logic, if they could be brought together, and brought to see that their true interests lie in so conceiving themselves that they have need of each other and are able to co-operate.

How shall we then conceive them? The nature of a science appears most clearly if we consider, not its origin and history, but the aim it sets itself, and if we consider also the specific way in which it sets about attaining its aim, we shall fairly easily detect what is characteristic of that science and differentiates it from the neighbouring sciences with which it is liable to be confused, or to get at loggerheads about the border-line between their respective domains.

Now Psychology is so important and fertile a science just because it has so many contacts with its neighbours, and has the duty of telling them what is psychologically possible before they launch their schemes to realize their ethical, logical or æsthetical ideals. In the case we are considering, that of Psychology and Logic—perhaps the most important case of all—this duty is unfortunately difficult and controversial. For the ordinary logician, for reasons best known to himself, is very suspicious of Psychology. So far from showing any willingness to use Psychology, and to learn from it how the human mind actually works, before constructing his logical ‘ideals,’ he treats psychical facts

as mere embarrassments and inconvenient complications, and endeavours to dispose of them by quibbles about the scientific status, and even the existence, of Psychology. I suppose that if it were possible to catch a live logician and to subject him to psycho-analysis, it would appear that he was at heart *afraid* of Psychology, and, half conscious of doing it injustice, detested it on the principle of *odisse quem laeseris*. The psychologist for his part, fearing the logician's redoubtable dialectics and ferocious epigrams, is apt to shrink from a conflict, and prefers to cultivate those sides of his subject which are most remote from Logic and least accessible to attack. Thus the border lands on both sides are devastated, and lie waste. The logician plasters over the approaches to them with sign-boards marked "*no thoroughfare*" the psychologist keeps away from them as a *terra incognita*, peopled by savage hordes of intractable problems and unfit for scientific exploration. The plain man, who wants to know how the ways he *does* think and aim at truth are related to the procedure he *ought* to adopt, gets no answer from either. Thus the actual situation is discreditable and detrimental to both sciences, it prevents them from co-operating to establish order and progress in the richest of the regions in which they have a common interest.

Let us see therefore whether we cannot ameliorate this distressing situation by defining our two sciences by their aim or purpose, premising only that we had best begin cautiously and perhaps a little vaguely, in order to avoid initial disputes about the definitions in each case. However, nearly all psychologists would agree that Psychology has a *descriptive* aim, it aims

at describing the nature and the phenomena of mind. This definition is not quite precise, because it does not tell us what to understand by 'mind,' and gives us no hint as to where to draw the line between what is mind and not mind, nor does it enable us to identify a psychic phenomenon. Still it is explicit in declaring that its aim is description, and nothing more, it does *not* attempt to judge, appreciate, or value, the psychic facts it catalogues. For Psychology, they are all just facts together, good, bad and indifferent. They are, or should be, catalogued impartially and exhaustively, and no question arises about their quality or value.

This does not mean, however, as is often imagined, that Psychology is bound to *ignore the existence of values*. For, seeing that in fact values occur, that would be a foolish fiction. When, therefore, we say that values do not concern Psychology, we should only mean that for Psychology the occurrence of values, or more precisely of value-claims (whether ethical, logical or æsthetical) is a psychical fact like any other. It must be mentioned in an exhaustive catalogue, but beyond that Psychology does not undertake to systematize the values alleged into a consistent body of doctrine. It leaves this difficult task to the 'normative' sciences which work over the same ground with this special interest.

Nor again does the descriptive aim of Psychology mean despair of discovering general laws from which assured predictions about human nature can be deduced. Success in the formulation of such laws may well be among the rewards of skilful and intelligent description. Only it does not seem very probable that when we get them they will greatly resemble in their

form the laws of the older physics. For these owed their illusory simplicity of form precisely to the assumption that the psychological aspect of our physical knowledge could be excluded *in limine* as an irrelevant complication. But the physical sciences are now rapidly learning that this assumption was ill founded. It was an undue simplification, and the new physics of Relativity is a confession of this fact. The Here and Now is no longer to be regarded as irrelevant to the notions of Space and Time, and the theory of scientific observation can no longer dispense with all mention of the observer and his standpoint. Similarly the doctrine of *quanta* seems to recognize a highly significant and fundamental analogy between the physical and the psychical. The ultimate units of energy are found to behave as psychical entities have long been known to behave. They exhibit the 'all or none' reaction, and their stimulation has to rise above a 'threshold' for any response to occur. Thus it would seem that the growth of scientific knowledge, so far from reducing the psychical to the physical, is moving the physical nearer to the psychical, and that in the end Psychology may have light to shed even upon Physics.

It would be strange therefore if Logic could preserve its standoffishness. It has no doubt a different aim; but cannot realize it without the aid of Psychology. It aims, as most logicians could perhaps be forced to admit, at something more than description, at something higher and more ambitious. It tries, not merely to describe the facts that interest it, but also somehow to *regulate* them. And to do this, it must *evaluate* them first, differentiating the good from the bad, and appreciating them accordingly. Thus Logic is one of the

sciences which sit in judgment over their phenomena, and recognize differences in worth. It interests itself in the distinctions between the good and the bad, the true and the false, the valid and the fallacious, and separates the sheep from the goats. Logic, in short, like ethics and æsthetics, tries to be a *normative* science.

But it may have been noticed that I did not seem quite confident that *all* logicians would admit that they aimed at evaluation. As a matter of fact I never succeeded in getting the late Prof. Bosanquet to admit this unambiguously and consistently, though I tried repeatedly*. But if this is not admitted, the sharp distinction between Logic and Psychology by the difference of their aims vanishes, and if Logic also is descriptive, it is hard to see how it can avoid becoming merely a psychological description of cognitive process. So logicians are mostly willing to admit that they are interested in the same subject-matter as Psychology. They too are concerned with mental processes and the operations of the mind, though not with *all* of them. For they are anxious to deny that they have to deal with all that concerns Psychology. They disclaim interest in the *non-cognitive* operations of the mind, and restrict themselves to 'cognitions,' 'thoughts,' or even 'forms of thought'. Also they wish to consider 'thought' *without the thinking*, the 'products' of thought, without the process. And how this may be is

* In two 'symposia' of the Aristotelian Society on "Can Logic abstract from the Psychological Conditions of Thinking?" (*Proceedings*, 1906-7), and on "The Import of Propositions" (*ibid* 1914-15). In the first Bosanquet finally denied the normative aim of Logic, in the second he assumed it. His *Logic* remained persistently ambiguous.

not very clear. Nor is it evident how the line should be drawn between the cognitive and the non-cognitive of our mental operations.

Nevertheless, it would seem that logicians mean their attitude to indicate not only that their subject belongs to the mental sciences, but also that they believe what they exclude to be irrelevant, and such that it can safely be ignored. This belief greatly simplifies the work of Logic, and is obviously convenient, but it involves a big assumption, and may be challenged. We certainly seem to require some proof that the 'non-cognitive' workings of the mind are as irrelevant to its cognitive procedures as is assumed. For *prima facie* this assumption seems to be anything but true. Non-cognitive processes seem to intervene at every step in our thinking. Every train of thought seems to need some volitional impetus or initiative to start it, and to be directed upon some desirable end. Nor is it self-evident, or even probable, that all minds always think alike, and that their thinking is unaffected by the rest of their psychological make-up. There seem to be marked differences between thinking in a rage and in a calm reflective mood, between thinking at random and with a definite purpose, between a mind full of prejudice and bias and one striving to be just and impartial. Yet we are asked to believe that two minds which differ in intelligence, in temperament, in interest, in aims, in desires, in hopes, fears, and prejudices, in history, in time, and in place, must of necessity argue in the same way from the same data or premisses, and will infallibly arrive at identical conclusions. It would not be reasonable to expect such a measure of agreement even from 'identical' twins.

and if it occurred in fact, it would be very remarkable, and a difficult fact to explain. Actually, of course, the greatest differences of thought, of belief, of aims and desires are found among men, and the prophecy that these differences are destined to disappear obtains no support from the history of the past. Why then should our Logic be based upon such fictions? At any rate it will be prudent to leave open in principle the question of the influence which the whole mind, or rather the whole personality, of each thinker exercises on the course of his thought. For that will leave us free to discriminate between the cases in which it really is irrelevant and those in which it makes all the difference, and accounts for what is actually done.

This counsel of prudence at once demands a certain co-operation between Psychology and Logic. The logician can no longer dismiss everything psychological as irrelevant, simply *en bloc* and as such, he must make himself acquainted, at least in a general way, with the whole range of psychical facts, in order to select from them those which may come to have logical relevance. And he must provide himself with a reasonable, or at least a reasoned, theory of how he is entitled to abstract from the infinite complexity of individual psychology, before he can require us to take his systems as more than castles in the air.

What adds to the difficulty of his task is that he cannot go the whole hog, and ignore Psychology altogether in his theory, however he neglects it in his practice. For he cannot decently deny that there *is* a psychological side to every logical process. Every process of thought has to start somewhere in the infinite world of ideas, and actually starts from a

personal $\pi\omicron\upsilon\ \sigma\tau\hat{\omega}$. Every premiss has to be acquired before it can be argued from, by selection from among an infinity of alternatives. Every conclusion has to be *drawn*, that is arrived at, rightly or wrongly, validly or by a jump. Experience seems to show that a train of thought which is not animated by a purpose and directed by a resolute will to a preconceived end is apt to wander from the point, to get lost, and to come to nothing. *Prima facie* the psychical side of thought is by no means a superfluity, but seems to be essential to its success. The natural inference would seem to be to recognize the fact, and to make the best of it, but thus the logicians will not hear of. It would look too much like a capitulation to Psychology, and after all they are not exempt from human frailty, and prejudice. So for years they have been struggling against this admission, pertinaciously but vainly.

The most distinguished of them, Mr F H Bradley, in the new edition of his great *Logic*, tries desperately to extricate Logic from its fatal entanglement with the psychical. His method of raising Logic above psychological criticism is to get metaphysics to cast its protecting mantle over it. This acts as a cap of darkness and enables logical facts to melt imperceptibly into the ultimate gloom. So he first admits the entanglement in the handsomest terms. "Truth necessarily implies an aspect of psychical existence. In order to be, truth itself must happen and occur, and must exist as what we call a mental event" (p 612). "The psychical aspect is inseparable from all thinking" (p 597). "Every conclusion is a mental occurrence" (p 549). "Every judgment is selective" (p 662), and so "in a sense" inference also "comes from and depends on

my selection " (p 614) In short, the trail of the psychological serpent is over the whole ground of Logic

Nevertheless he will not regard these facts as decisive of the character of Logic Even though Logic has "in order to exist, to take place in a world of psychical irrelevancy" (p. 616), yet equally "if it means to exist, it has to abstract" from this (p 612) The psychic facts are merely irrelevancies, corruptions of the purity of thought, and frustrations of its aim Logic has another side, on which it is an objective "self-development," which proceeds regardless of psychical events On this side of its nature it aspires to the supernal realm of ultimate reality which is dominated by the Absolute, the Whole of Reality

Unfortunately here, too, it is rebuffed The Absolute cannot give it an assured place in the hierarchy of the sciences, and strictly speaking has no use for Logic For it transcends thought (which cannot help being relational), and swallows up every form of finite being. Consequently, there is an end here also to Logic More specifically, every judgment is about reality, but does not know what it is about It claims truth, but cannot substantiate its claim, because the object it claims to know is only known in part, and the unknown part may falsify its claim Thus its truth always remains subject to unexpressed conditions which it cannot know, and fails to include within itself (p 639) To include them and to become absolutely safe and unconditionally true, it would have to include everything. So it is driven from the selected object with which it started into a desperate affirmation about the Whole of Reality. This, however, it cannot achieve In vain

does it claim an infallibility which is stultified by the vicissitudes of its compulsory transformations. In vain does it turn itself into an inference, and claim necessity for its forced moves. In vain, therefore, does it appeal to an inhuman metaphysic, which is conversant only with a 'reality' which passes all understanding, and condemns as 'appearance' "the realm of inference and the sphere of logic," because it is a "special aspect of the one Universe," and not the Whole (p 616).

Although the conditions thus prescribed for the attainment of absolute truth and ultimate salvation would appear to be of a self-defeating sort, Mr Bradley throws all the blame for the impracticability of his metaphysic and the failure of his logic on the human aspect, which is despised, but cannot be discarded, because it is needed as a scape-goat. Man is allowed to contribute nothing to human knowledge but error and illusion; yet his contribution is potent enough to frustrate "the necessary self-development" of thought (pp 447, 574, etc). Indissolubly tied to a human or psychological side, the 'divine' or logical cannot realize its proper aim. Thus Logic is in the end a failure. To quote once more, "in order to exist it must more or less ignore its own ideal" (p 533), and the final verdict on it is "a grounded doubt as to how far in logic the claim of logic is made good" (p 601).

This verdict surely should distress all who are trying to preserve their faith in the rationality of philosophy. They will however be less dismayed when they observe that it results from the arbitrary assumptions of Mr. Bradley about the definitions and relations of Psychology and Logic. After all, to conceive the human aspect of thought as the source and seat only of error,

is merely a value-judgment about the human mind as such. It not merely ignores the valuable truths won by human efforts, but in discrediting all other views but his discredits also the human mind that framed his judgment. If all thought is tainted with psychology, Mr Bradley's also cannot claim exemption from human frailty. To conceive the ideal of Logic as a "self-development" perpetually thwarted by psychological impediment, is merely a *refusal* to conceive it as a *purposive* development which normally *achieves* the ends of human striving. And so to draw the line between Logic and Psychology as to frustrate and paralyse them both, is merely to abuse the power we have to define our sciences in the most convenient way. Mr Bradley's conclusions in reality discredit only his conceptions of Logic and Psychology.

Actually moreover the position of Logic, in spite of its repudiation by the very metaphysic which incited it to rise above itself, is by no means desperate. It still has an alternative to contracting an alliance with Psychology. It can take refuge with an older science, which nursed it in its cradle, and presided over its baptism, and this is what most logicians still prefer to do. For Logic is still what it was called in the beginning, a science of *words* (*λόγοι*), and in its traditional forms, it is still essentially an attempt to regulate the use of words, and an outgrowth of *Grammar*. Grammar also has the problem of relating what is to what ought to be, and the ambition to be normative, and to be more than a record of actual speech, it aspires to lay down the rules of correct speech, even as Logic has always tried to be a guide to correct thought. From the same motive, in both cases. In both cases it

seemed desirable to curb the licence of individual variation, to set up standards by which to measure deviations from the norm, and authorities to decide on what was *right*. Accordingly, thanks to the Greeks (the Sophists, Socrates, Plato and Aristotle), Logic emerged from the rules that regulated dialectical debate, nor has it ever been able to obliterate the birthmarks of its genesis

Now in a debate you must effectively say what you mean, so as to be understood. You must therefore use words whose meaning will be understood, and must stick to it: if you arbitrarily change it, you run the risk of failing to convey your meaning. Consequently the meaning of the words forms a presupposition of the debate, and must be agreed on at the outset. It forms also the ultimate court of appeal, which decides which side has won. You will find this method beautifully illustrated in every Socratic dialogue.

The method, however, implies that the meanings of words *are known* to start with, and *fixed*, that is, are not to be tampered with or developed in the course of the argument (except by common consent). These assumptions are convenient and, roughly, true, but they are logical fictions, and unfortunately are not psychologically exact, but often prove very misleading.

You can see their deceptiveness, if you consider why any one should ever make a statement. It is not enough that he should believe it *true*, he must also believe it to be *worth making*. And that means that he must believe it to be *new*, to some extent. That is why we do not go about proclaiming all the truths we know, and boring our audience with the Multiplication Table and the death of Queen Anne. Normally, therefore,

any statement that is actually made will be news to those who hear it.

But if it is, it will always more or less alter the meaning of the terms it uses in the minds it addresses. If we symbolize it by $S \text{ is } P$, it will always convey two novelties. It asserts (for the first time, *ex hypothesi*) that the subject S is one of which P can be predicated, and that the predicate P is one which can be predicated of this S . Neither of these facts is supposed to have been known before; unless these conditions were fulfilled, the making of the judgment becomes psychologically impossible.

Now if this is so, it is clear that the logical convention about the fixity of terms is not exactly true. The simple S we started with has turned into an *S-of-which-P-is-predicable*, the simple P into a *P-predicable-of-S*. Thus terms, as we use them in our actual knowing, can change, or develop, their meaning. In fact, when we look closely, they *always* do. The fixity of meanings is a fiction, which only works for the reason that Mark Twain could not use the glacier to carry him down the mountain, viz, that the changes of meaning are normally too slow to vitiate our fiction. Nevertheless, a word's accepted meaning, which you can look up in the dictionary, in no wise guarantees you against future developments, or forbids you to use it in new senses. Provided of course that you *can* convey your meaning by your new sense, and make yourself understood.

This discovery of the psychological nature of meaning has a number of interesting consequences. In the first place, it renders the ordinary logic of the text-books a purely verbal affair, a sort of extension of grammar. It becomes a game with the accepted meanings of words,

and its laws are just rules for the tricks which you may play with words, if you wish to conform to their established meanings. It justifies the wit who said that all philosophy was "nothing but a systematic misuse of a terminology invented expressly for this purpose." But it debars Logic from having anything to do with meaning, or thought, or truth, or knowledge; for it is debarred from inquiring what words may mean in the actual context in which they are used. It has become irrelevant to ask what the actual meaning *was*, and whether it was successfully conveyed. That sort of question must not be asked, for it would upset Logic, and spoil its game. So Logic gaily abstracts from personal meaning, and scraps it *ab initio*. Hence, as I have elsewhere shown at length,* this sort of Logic, which I call "Formal Logic" is a strictly *meaningless* science. It has once for all preferred dictionary-meaning to real meaning, complete surrender to verbalism to contact with Psychology.

But the opposite choice is intrinsically just as feasible. The logician can opt for an alliance with Psychology. He can prefer to inquire what men really mean by what they say, how they try to convey their meaning, how far they succeed, whether they attain truth, and what sort of truth they achieve. A logic of personal meaning, actual thinking, and real truth is conceivable, though it might not at first lend itself so well to the annual efflorescence of chestnuts in examination papers. Such a logic would doubtless have to drop merely verbal reasoning, and to cease pitting verbal implications against expressed intentions, it would repudiate Bradley's amazing declaration that "you not

* In "Formal Logic," Macmillan, 1912

only endeavour to say what you mean, but you are once and for all and for ever condemned to mean what you say " *

If you cling to this dictum, it pronounces the doom of Logic, alienates it from Psychology and irretrievably enslaves it to Grammar. We cannot perhaps prevent the formal logician from thus condemning himself, to all eternity, to mean what he, or rather his dictionary, says, but we need not follow his example, and share his doom. Let us rather come to terms with Psychology. Let us give psychological fact authority over verbal convention, and allow reasoners to appeal to it from the latter. Let us allow for the development of the meanings of words in the growth of knowledge. Let us study the normal ways of human thinking and knowing which the sciences and common life reveal, before we set up 'norms' and 'ideals' in our Logic which demand the abnormal and the impossible. If we are willing to proceed in this empirical, tentative, and humble manner, we shall not find Psychology an enemy or a danger. It will rather be suggestive, and will help us to extract from the enormous complexity and variety of human thinking and its problems abundant stimulus for a really competent and progressive science of Logic.

* "Essays in Truth and Reality," p. 234. I commented, in *Mind*, No. 73, p. 41, on this very instructive passage, when it had appeared in *Mind*, No. 72, pp. 500-501.

IV

PSYCHOLOGY AND ETHICS

By PRINCIPAL L. P. JACKS, D.D , LL.D.

THE subject on which I have the honour to speak has both a theoretical and a practical interest. The theoretical interest centres in the logical relationship between the two sciences, the practical, on the question as to how far psychology contributes to the promotion of right conduct. The two of course are not unconnected, but it is with the second that my remarks to-night will be mainly concerned. In other words I shall take the liberty of addressing you not primarily as examiners, but as persons interested in conduct and desirous of its improvement.

Such an interest, I take it, we all have, and our having it is a profoundly significant psychological fact; perhaps the most significant of all the facts which the psychologist has to take account of. Among the factors which have to be considered in ethical inquiry, the motive which prompts us to inquire should not be forgotten. That motive will always be found to originate in a judgment of value, from the belief, conscious or unconscious, that the world will somehow be better off as a result of our undertaking these inquiries than it would be if we left them alone. This is the last thing, and perhaps the chief thing, to be explained in a psychological analysis of the moral

consciousness ; our belief, namely, that the subject is worth inquiring into and will pay us in value down for our trouble. It is another name for our interest in right conduct. Without it you and I would not be here to-night. Its presence in all of us is my justification for addressing you as having a *practical* interest in the subject which has been assigned to me.

On the purely theoretical side there is little that I can usefully add to what will be found in accredited textbooks. Many years ago when I was a pupil of James Martineau I learnt from him a familiar lesson, which seems to me to stand as firm in the light of the new psychology as it did in that of the old psychology which was current in those days, and which I do not think will be upset by any newer psychology the future may have in store. The lesson was that our moral experience can never be explained by reducing it to non-moral elements. It is not a concoction or cooked-up product, and all attempts to explain it in that way, even when the cooking process is dignified by the word "evolution," leave its essential and characteristic features unexplained. Not that the cooking process is altogether a figment, unquestionably it goes on in many forms ; but behind every stage of it there stands the figure of the cook, who knows at least the difference between right and wrong, and prepares his dishes accordingly. The "cook" is the moral consciousness itself, the directive principle of the whole operation, the very thing that has to be explained, and the only difference at this point between the new psychology and the old is that the new gives us a better account of the process that goes on in the kitchen. But the directing presence of the "cook" is just as essential under the new

cooking as it was under the old—perhaps more so. This figure of speech which, as far as I am aware, is not to be found in any of the accredited text-books, though Carlyle has something like it, is all that I propose to offer on the purely theoretical side of the question. It is an old-fashioned doctrine and those of you who may desire further authority, will find it very warmly advocated in Plato.

Turning now to the practical side it will perhaps conduce to clearness if I summarize at once the effect upon ethics of recent developments in psychology—so far, that is, as I am able to estimate them. The general effect, I think, has been to make our ethical relationships more difficult, more interesting, more dramatic, by introducing fresh possibilities both of good and of evil. New powers have been placed at our disposal which will be found eminently serviceable to ideal aims ; but those whose aims are the reverse of ideal can equally make use of them , and they would certainly be dangerous if their application were entrusted to morally incompetent hands. Our ethical relationships, viewed in the light of the new psychology, seem to me more complicated, more challenging, more in need of moral skill to control them, than they were. The chart of our life has been extended , many blank spaces have been filled in ; rocks and shoals have been indicated where previously we thought there was pure water , but what voyages men will take and what ports they will arrive at, in consequence of this new knowledge, on that psychology throws no light. The psychology of religion for example, has made religion much more interesting as a subject of inquiry and a topic of discourse , it has been a godsend to many of us who were hard up for

anything more to say, or who found that our audiences were beginning to be bored by the kind of thing we were saying to them. The psychology of religion has given us a much deeper insight into the mind of the savage at the one end and into the mind of the saint at the other, but our knowledge of the last does not turn us into saints any more than our knowledge of the first turns us into savages. It makes both saints and savages more interesting, but leaves it an open question whether the saint or the savage is nearer to the truth of things, a question on which, as a matter of fact, there is some difference of opinion. We have still to decide for ourselves whether the saint or the savage provides us with the better model for our own practice, or whether, in view of what we know about the minds of both of them, we should not be well advised to avoid imitating either of them—an alternative which evidently commends itself to some psychologists. In other words I cannot see that the psychology of religion is making any of us more religious, either in the narrow sense of being more inclined to say our prayers, or in the broader sense of being more emotionally alive to the ultimate realities of this staggering universe—the moral law within and the starry firmament above. My own experience after reading extensively in the psychology of religion is like that of the caretaker who had listened to twenty courses of Bampton Lectures in defence of Christianity—he thanked God, you may remember, that he was still a Christian. In the same way my studies in the psychology of politics—to which Mr Graham Wallas is making such important contributions—has filled me with doubts—which perhaps less stupid people will not share with me—as to whether I am a good

citizen or not. As to the psychology of sex, which touches some of the most perplexing of our moral problems, there, too, I am led to feel that the path of right conduct is much more difficult to find than I had previously thought it.

At the same time I do not regard this increase of difficulty as a thing to be deplored—as a thing to pull a long face over. Man is a being who does better, who behaves himself better when he is confronted with big difficulties than when he is confronted with little ones. They put him on his mettle. They rouse the heroic strain in his nature. That again is a psychological fact of great interest which deserves more attention from psychologists than it has received—the existence in man of an heroic strain which needs the challenge of great difficulties to summon it into action. There is an important contact at that point between Ethics and Psychology—the moralist showing us what a dangerous business life is, and the psychologist showing us the presence in ourselves of something that is made for facing danger and for coping with it.

Perhaps we shall see all this more clearly if we consider for a moment the bearing of recent developments in psychology on the question of moral responsibility.

Phenomena of good and evil which were once set down to the moral decisions of individuals, and for which therefore they could be properly held responsible, are now being increasingly explained as due to an instinctive process, most of it unconscious, for which human beings are neither to be praised nor blamed. At least it would be improper to praise or blame them up to date.

But an important difference arises in that respect *from the moment that psychology announces these new discoveries*. So long as a man is unaware of the unconscious processes which are determining his actions it would be unjust to hold him to account for what he does. The times of that ignorance God winked at, and we may assume that He still continues to wink in the case of any person who knows nothing of the unconscious forces that are moulding his conduct, and who, therefore, cannot be expected to control them. But with the advent of the new psychology this state of innocent ignorance disappears, and a new and most formidable ethical problem confronts us, that, namely, of bringing the dark regions of our unconscious self under conscious control.

It is a nice point whether we may continue to speak of the unconscious at all after the psychologist has made us conscious that it exists, and informed us further, with a good deal of particularity, of the extensive part it plays in making us what we are. At all events the information he gives us about the unconscious makes a very large addition to our responsibility in the control of these forces, with which he has suddenly made us acquainted. No one, for example, who has read what has recently been written about the psychology of sex, and of the many unconscious processes which work their will upon us at that point, can escape the feeling that he must walk much more warily for the future than he has been accustomed to walk in the past. It is as though the rulers of a small state with clearly defined boundaries were suddenly put into possession of a vast hinterland full of wild beasts and savage tribes and called upon to bring it under cultivation.

and extirpate the wild beasts and impose law and order upon the savages. In this way I think it may be said that while psychology, on the one hand, dismisses a good many of the moral judgments we have hitherto passed on ourselves and on our fellowmen, on the other hand it raises a new series of moral problems which on the whole are more perplexing than those it has dismissed. It may teach us, for example, that the class we commonly regard as criminal is more to be pitied than blamed, but at the same time it introduces us to certain disastrous possibilities in our own hinterlands which call for the utmost vigilance and self-control.

For these reasons I am inclined to think that the new psychology is no more successful than the old in relieving us of our ethical responsibilities. The old psychology seemed at first sight to simplify morality by reducing it to a mere affair of controlling our desires for pleasure and our aversions to pain. But it soon turned out that we could not conduct the business of our own happiness unless we took the happiness of other people into account. [And since these others were equally bound to take account of ours, morality at once became a confused tangle of cross purposes, everybody claiming to be the supreme judge of his own happiness and at the same time having to submit to what others considered good for him. The gain that psychology had won by simplifying ethics into an affair of pleasures and pains was thus immediately lost by the rise of a new difficulty, the difficulty of having to play the part of operator and patient at the same time, my operations for the increase of your happiness being constantly upset by your simultaneous operations for the increase of mine.

Precisely the same difficulty arises if you explain the good and evil tendencies of men in the current terms of the unconscious. My ethical problem is not limited to the control of the unconscious as it takes place in me ; it includes also the action of the unconscious in you and the rest of my neighbours. And the same is reciprocally true of you in your relation to me. Neither of us has a licence to regard himself as exclusively the operator, and the other as exclusively the patient. The ethical relationship is reciprocal and dramatic , it is the play of spiritual personalities upon each other ; the give of one side involves the take of the other. The principles of that relationship, the principles which make it right or wrong as the case may be, are unaffected by the nature of the treatment we are administering to one another. The treatment prescribed by the new psychology may be a great improvement on any that has gone before ; I am inclined to think it is , but this does not entitle me to impose it upon you without your consent nor you upon me without mine—and the ethical question lies precisely there—outside the range of the psychological inquiry.

I use the word "treatment " advisedly. As we all know, the new psychology is proving immensely fruitful in pathological cases. But we must be careful not to take the procedure proper to a pathological case as typical of normal ethical relationships—not to suppose that we can apply psychology to the problems of sex, or to the problems of politics, or to the problems of education and religion under the simple conditions that obtain when we apply it to the case of admitted disease. In the pathological case the two parts of operator and patient are clearly defined ; they are not interchange-

able, there is no question as to which is which. There has, I venture to think, been some confusion of mind at this point. The great success which has attended the efforts of experts to apply psychology to the cure of abnormal pathological conditions, has encouraged the hope that the rulers of mankind, if sufficiently equipped with political psychology, might be equally successful in curing the maladies of civilization. But the relation of the rulers and the ruled, especially in democratic communities, is very different from that of doctor and patient. Here the difficulty would be not so much in finding rulers who were psychologists but in finding a public who would submit to their treatment. I recently read in an American publication a chapter on the "psychology of leadership" and it was quite evident that the writer had the inappropriate figure of doctor and patient in his mind. After deploring the lack of great leaders in the modern world the writer laid down certain principles by the application of which a sufficient crop of leaders would be forthcoming. But a psychology which promises a crop of *leaders* does not amount to very much unless it is backed up by another psychology which promises a crop of *followers*. For some reason or another, which perhaps it would not be difficult to guess, the psychology of followership, as distinct from that of leadership, has not so far engaged the attention of experts. The nearest approach that I know to a treatise on the principles of followership is to be found in a little book by the late Josiah Royce on the Philosophy of Loyalty, but that could hardly be called a treatise on psychology, dealing as it does with ethical imperatives that lie beyond the reach of our analysis. In this matter of leadership it is evident

that the most elaborate and exact psychology would be of no value without an ethical assignment of parts between the leaders on the one side and the followers on the other, and without an ethical agreement as to the value of the objects which leadership sets out to achieve.

The same holds true, I think, of the psychology of sex, the psychology of politics, and the psychology of religion. In none of these are we dealing with the one-sided action of an operator or a patient. We are dealing with the interaction of members of a group on one another—that is, with a highly dramatic situation. We have only to remind ourselves, for example, that the psychology of sex is a game at which *both* sexes can play to realize the confusion that must result in the absence of some overarching ethical aim which the two sexes are agreed to co-operate in achieving. The life of a married couple, each of whom was an expert in this department of psychology but ethically at variance with the other, might easily become a life of mutual obstruction and cross purposes. One of the incidental benefits I hope for from the increasing study of psychology is to bring home to us our deficiency at this point—our need of some overarching ethical end to co-ordinate our applications of the new knowledge. For want of such an ethical understanding to begin with, the effect of the new knowledge will be to ravel up our cross purposes into more dangerous entanglements—to widen the area for tragedies and frustrations—in the relationships of the sexes, in education, in politics and in every other department of our human fortunes to which psychology is now being applied.

This, I think has been the general effect of scientific enlightenment up to date; and I cannot look upon

psychology as an exception to the other sciences, as relieving our civilization from its present distractions, but rather as adding to them, by introducing a type of knowledge which more than any other needs to be put under the ethical control of an overarching aim. Psychology, one may say, has immensely increased the fighting forces of our civilization, but it has not helped us much, if at all, in settling the question of what is worth fighting for and what is not. It has thrown a flood of precious light on the causes of our present behaviour, thereby putting us in a position to behave ourselves differently for the future. But whether such a difference is desirable, or what form it should take, which after all are the important questions, psychology leaves us to determine for ourselves.

So far as I have been able to observe there is no science that is either fool proof or knave proof, no truth so simple but a fool will make a mess of its applications, none so sublime but a knave will capture it for a sinister interest. It is in vain that we look to psychology, or to any other science, even theological science, to furnish us with protection against the frailties and fallibilities incident to our nature. Rather should we think of these sciences as providing new fields for ethical error and misdoing. Doubtless they perform the same office for our virtues, but whether the new opportunity will be taken advantage of by our vices or our virtues is a question not to be answered on psychological ground.

At this point, which is the point of responsibility, the ethical point, we reach the limit of all the sciences, whether they are sciences of matter or of mind. There is no one of them that carries within it the guarantee

of its right application. There is no one of them of which you can say "this science has only *to be stated*, these discoveries have only to be made public, and ethical results will immediately follow—foolish men, as soon as they hear what *we* have to tell them, will become wise, bad men will become good and good men will become better."

And yet obvious as all that is, there is a tendency to forget it, especially among those of us who pursue the science of the mind. To get truth into a form which shall be self-acting on the moral side, to find the formula which shall be capable of none but virtuous applications, and the mere statement of which will send the devil to the right-about—has not this been the fond dream of many philosophers? It has never been fulfilled, nor can I see that recent advances in psychology have brought it any nearer to fulfilment.

There is one other point on which I should like to say a word before closing, as needing more elucidation from psychologists than it has yet received. I spoke a moment ago of the attempt which certain psychologists have made to reduce our moral experiences to non-moral elements, and of my belief that it cannot be done. Something analogous to that may be discerned in theories now widely current which trace our conscious life to unconscious antecedents or purely instinctive beginning. It seems to me that unless these theories are very carefully handled they may end by undermining the foundations of the very science which proposes them. Whatever part instinct may play in the general operations of the intellect will be continued when the intellect turns to the particular work of psychological study. The psychologist cannot claim

to be exempt as a thinker from the conditions he lays down for thought in general ; and if it be true that all thought has an instinctive basis we can hardly avoid the rather queer conclusion that psychology itself has no validity beyond that of the psychologist's instinct. The same applies to the unconscious, the subconscious, and the various forms of complex which now figure so largely in psychological theory. What part, we are tempted to ask, do these processes play in the construction of the science which informs us as to their existence and nature ? In reading Freud, for example, I constantly find myself held up by that rather disconcerting question. May not this book, I ask myself, this very line of thought which reveals the distortions produced by the suppressed complex, be suffering, itself, from the same cause ? In all these theories we have to be careful not to push our analysis to a point which destroys the instrument of it and leaves the analysis itself without validity. The ethical parallel to this danger I have already mentioned. It is the danger that, at the very moment when the applications of psychology to human culture are in sorest need of an overarching ethical aim, we may find that psychology has undermined the ground on which ethical construction has to rest.

V

PSYCHOLOGY AND THEOLOGY

By THE REV. A E J. RAWLINSON, M A , B D

As long ago as 1857 Archbishop Temple wrote to his old Oxford tutor, Robert Scott : " Our theology has been cast in a scholastic mould, *i.e.*, all based on logic. We are in need of, and we are being gradually forced into, a theology based on psychology. The transition, I fear, will not be without much pain but nothing can prevent it " * It is not altogether easy to know precisely what the Archbishop meant. There is a sense, as I hope later on to point out, in which it is impossible to base a theology upon psychology. Nevertheless there can be no question but that in the course of the last half-century there has been a considerable change in the methods of current theology and if the term " theology " be taken in a wide sense, so as to include not only the doctrine of God, but also the group of associated intellectual disciplines commonly embraced under the general heading of " theological studies "—a group which includes Biblical Exegesis, History of Doctrine, Comparative Religion, Religious Anthropology, Moral, Ascetic and Mystical Theology, and also, quite specifically, the Psychology of Religion—then undoubtedly there has been a marked tendency to bring psychological methods to bear upon many of these

* " Memoirs of Archbishop Temple," II, p 517

branches of study, and theologians are deeply indebted to the researches of modern psychologists for the new light which has been thrown upon many of their problems.

Psychology, of course, means the study of the human soul ; and Religion, regarded strictly from the psychological point of view, is a function of the human soul—a mode of behaviour, as the American school of “behaviourists” would say : or, as other psychologists prefer to express it, a type of “experience,” a specific form of “consciousness,” or a means by which personality is “integrated.” None of these various ways of regarding Religion is a complete statement of all that it involves, even when it is considered exclusively from the human side : but each is a fruitful point of view from which to study certain aspects of religion, and theologians have learnt with much profit from them all. In particular, the concentration of attention upon the psychological aspects of religion, regarded either as a mode of behaviour, a type of consciousness, or a specific form of spiritual life, has helped to clarify and to make explicit the distinction now universally drawn between religion and theology. The former—it is now recognized—is more and other than the latter. Religious men have always known this, but in the eighteenth century—the age of rationalism—the theologians appear to have been almost blind to the distinction, and the attempt to make every charcoal burner a theologian survives still in certain quarters, though on the whole the pendulum to-day has swung too violently in the other direction : there are circles in which it is vainly imagined that religion can survive without any theology at all !

Among the theologians themselves the psychological method of approach to the study of religion may be said to date from the work of Schleiermacher, who defined Religion in general as a feeling of dependence upon non-human powers. Such a feeling of dependence he held to have characterized the human race in various forms and in varying degree throughout its long history. It was an immediate datum of human consciousness, a permanent element in human nature. Schleiermacher's definition may be criticized in so far as it bases religion primarily upon *feeling*. Its value lay in the fact that it was an assertion in a rationalistic age of the right of religion to exist, and of its claim to recognition as an element in human experience which is *sui generis*, which persists among all peoples and at all levels of culture, and which is not reducible either to morality on the one hand or to pure thought on the other. It has been largely due to Schleiermacher's influence, whether direct or indirect, that many theologians, as well as psychologists, have tended to conceive of religion primarily as a form of consciousness, and even to base a Christology upon such a conception. Jesus, it has been suggested, is to be understood simply as being the supreme religious genius of humanity, the ideal exemplification of the religious type of consciousness at its highest. For Sabatier, the disciple of Schleiermacher, Jesus is rather the first Christian than the direct object of Christian faith, the supreme Pioneer of the Religion of the Spirit. The aim of the disciple should be the attainment of a religious consciousness identical with that of Jesus, who as the ideally religious Man would thus become "the firstborn of many brethren." That the attitude of Christians towards their Master has

never been thus reducible to an ideal of spiritual imitation is clear to every student of Christian history, and moreover to men conscious within themselves of spiritual impotence and sin the mere invitation to become other than in fact they are is not in itself a redemptive Gospel capable of transforming personality or of moulding life. The interest, however, of theologians in what may be called the psychology of Jesus was not exhausted by Sabatier's position. The latter half of the nineteenth century saw the production in Germany of a number of professedly historical studies of what came to be called "the Messianic self-consciousness of Jesus," as well as of a number of speculative Christologies based upon the idea of *κένωσις* or self-emptying, the object of which was to attempt a quasi-psychological theory of the nature of our Lord's human consciousness and of the limitations of His human knowledge. Bishop Gore's well-known Bampton Lectures on "The Incarnation of the Son of God," the same writer's "Dissertations on Subjects connected with the Incarnation," together with the Bishop of Zanzibar's book "The One Christ," are the best examples in English of this tendency. I observe that Professor Lebreton, in a review in *Theology* (October, 1922) of Dr H. M. Relton's book "A Study in Christology," notes that, despite the apparent harmony between Dr Relton's Christology and that of the scholastic theologians, there is really a profound difference in the whole conception and mode of approach. The same terms "person" and "hypostasis" may be employed, but their connotation is wholly different. For the scholastics the connotation of the terms in question is metaphysical, for many of our contem-

poraries it is primarily psychological. The result is that, whereas for S Thomas the problem of Christology is to establish the unity of Christ's personal subsistence, for Dr Relton it is to establish the unity of His consciousness "Upon no other theory," writes the latter in defence of the doctrine which he elaborates, "can we continue to speak of His having possessed Two Natures, and yet as having had but a single consciousness"* Professor Lebreton's comment is that such an idea is wholly foreign both to Leontius of Byzantium and to S John of Damascus, equally foreign to the scholastic theologians and to Professor Lebreton himself According to the latter there is in Christ a single conscious subject, but neither a single consciousness, a single will, nor a single knowledge I merely note in passing this divergence of view between the Anglican and the Roman theologian, and add that I do not personally attach much value to any of these attempts to solve psychologically the problem of the person of Jesus Christ, whether from the side of speculative dogmatics or from that of the historical study of the Gospels With regard to the latter I believe the final word of wisdom to have been uttered by Dr. Burkitt when he wrote that "our Gospels are very far from being a sort of psychological novel with Jesus Christ for Hero"† With regard to the former I do not believe the Kenotic Christology to have been anything more than a piece of mediating mythology which paved the way for the fuller recognition of the genuineness and reality of our Lord's manhood, and enabled us to get rid of the idea that the Incarnate Christ possessed, as it

* Relton, *op cit*, p 268

† Burkitt, "The Gospel History and its Transmission," p 77

were, a Divine capacity side by side with a human capacity, and acted alternately, now in the one capacity, and now in the other. I believe that henceforward those of us who accept the doctrine of the Incarnation will have to be content to say simply that Jesus Christ is as Divine as God and as human as man, that He is the expression of the Divine Life in terms of manhood, and that for any further account of the ultimate mystery of His Person we are constrained to fall back upon the language of religious mythology rather than of speculative metaphysics, and are unable to improve upon the statement of the Creed which describes Him as the eternal Son of God "who for us men, and for our salvation came down from heaven, and was made man" Before leaving this part of my subject I would refer in passing to the attempt of the late Professor Sanday to formulate a theory of the person of Christ by suggesting that the *locus* of His Deity was to be sought rather in the subconscious than in the conscious region of His mind *—a bold and original application of a current psychological conception, by which, however, the majority of students have not felt that the problem of the Incarnation was very greatly illuminated. The same may be said also of Miss Evelyn Underhill's attempt—in the judgment of most readers a very strained and unconvincing attempt—to interpret the life of Christ, in her book "The Mystic Way," in terms of a psychological scheme based upon her study of the psychology of the greater mystic saints. The most recent attempt of all to apply psychological conceptions to the study of the Gospels is contained in a book by Georges Berguer of the University of Geneva, trans-

* "Christologies Ancient and Modern," pp 135 *sqq*

lated into English under the title of "Some Aspects of the Life of Jesus · from the Psychological and Psycho-analytic Point of View," a book which it is by no means easy to appraise. It is the work rather of an amateur than of a professional, though of an amateur who has read widely in the literatures both of modern psychology and of modern critical study of the Gospels. From a critical point of view it is at times radical and at times conservative · the author is not quite master of his materials · On the psychological side he is even more at the mercy of the somewhat conflicting theories of his authorities · We are not spared the application of the psycho-analytic conceptions of the *Œdipus complex* and the *paternal imago* to the interpretation of our Lord's religious life, or the interpretation of certain elements in the Gospel story (elements which the author, following the "liberal" convention, regards as legendary or mythical), as products of the dream-psychology of the corporate mind, "born of a psychological conflict in the depths of a people's soul" * The book, nevertheless, contains flashes of insight · it improves as it goes on · and it is instinct in some passages with the spirit of a very real religious devotion · It is possible that it may prove to be the forerunner of quite a number of similar works purporting to shed fresh light on the Gospels from the psychological point of view. I believe personally that such a literature, if it is produced, will be likely to prove ephemeral, and that very little of any value will result from it. I have already indicated my conviction, shared with Professor Burkitt, that the Gospels are anything rather than psychological novels, and that the personality of Him whom Christians worship as

* *Op cit*, p 127

Lord and Son of God will for ever elude interpretation, in any but the most general sense of the word, in terms of a psychological science built up upon a basis of generalisations about average humanity, or the quasi-scientific analysis of mental neuroses.

If, however, at least in my judgment, very little that is of value has resulted from the attempts which have been made to apply the provisional working hypotheses of modern psychology to the interpretation of the historical personality of the Lord Jesus Christ, a great deal of light has been thrown by psychological research upon the phenomena of prophecy, especially in its more ecstatic and visionary forms · upon many of the abnormal experiences—hallucinatory visions and auditions, cataleptic trances, levitation, stigmatisation, various kinds of apparently miraculous “workings of powers”—ascribed to certain of the saints : upon the nature of religious conversion in its directly psychological aspects · upon the phenomenon of “speaking with tongues” which characterized the beginnings of Christianity and which has recurred occasionally since (*e.g.*, among the Camisards of the Cévennes in the early eighteenth century, amongst the Irvingites in the early nineteenth century, and amongst the Welsh Revivalists at the beginning of the present century), and also upon the apparent anæsthesia exhibited by many of the Christian martyrs under torture. Gustav Hölcher in his work *Die Profeten* has elaborately studied the probable psychology of the Old Testament prophets, Heinrich Wenel in *Die Wirkungen des Geistes und der Geister*, has applied similar methods to the study of the more abnormal of the “pneumatic” phenomena of the New Testament and of early Chris-

tianity A similar line of interpretation is adopted by Kirsopp Lake in his "Earlier Epistles of S Paul," and I may refer also to a little work by Mr E. R. Micklem, of Mansfield College, called "Miracles and the New Psychology" There can be little doubt but that many of the apparently miraculous phenomena by which religion in some of its more remarkable manifestations has frequently been attended, and which an earlier rationalism had been disposed to reject or to explain away as legendary, are now seen to be explicable up to a point in terms of such conceptions as those of hypnosis, auto-suggestion, hetero-suggestion, and neurotic hallucination or hysteria. The real core of religion was never to be found in these things, which are merely the supernormal accompaniments of intense religious life in personalities of a particular psychological type The great saints were always perfectly well aware that abnormal experiences involved elements of spiritual peril There was danger lest "by reason of the exceeding greatness of the revelations" individuals might become "exalted overmuch" S Teresa, herself a great visionary saint, taught that visions and apparent revelations might proceed either from God or from the Devil, that only in the light of their spiritual fruits was a valid judgment possible as to their real character; a doctrine which affords clear evidence of the great Spanish mystic's extraordinary sanity and practical good sense. S. Bonaventura is said to have remarked similarly about visions that "They neither make the saint nor reveal him otherwise Balaam would have been a saint, and the she-ass that saw the angel."

It is probable that a strictly medical judgment upon the lives of certain of the saints would be of an unfavour-

able kind. It is not wholly surprising that modern psycho-pathologists, accustomed to the diagnosis of mental disease in the consulting-room, are not infrequently disposed to dismiss the phenomenon of "sanctity" in some of its more exalted manifestations as being simply the result of acute hysteria, loss of mental balance, or even (in particular cases) of sexual perversion. The physician's criterion is that of normality, and the saints have been in some cases by no means normal persons. The appalling nature of the self-inflicted penances and austerities practised by many of the saints (*e g*, the Blessed Heinrich Suso) suggests a pathological strain in their psychology, the perversion known as masochism was probably the subconscious motive of the procedure of the Flagellants: the life-stories of other saints are such as to lend colour to the hypothesis of neurosis and mental instability. It is possible that a scientific and medically-minded generation may be disposed to rate physical health and psychological normality too high in the scale of comparative values. It has been suggested that there are or may be spiritual heights which—in particular cases at least—are unattainable save at the cost of much suffering, and at the sacrifice of physical or even of psychical well-being. However this may be, there is abundant evidence that religion in normal cases is a force which makes for sanity and psychological health. It is recognized, even by psychologists who are themselves religiously sceptical, as being frequently the most effective means of "integrating" an otherwise divided personality. It may be suggested, therefore, that the more obviously neurotic among the saints were probably temperamentally unstable *ab initio*, that in their case

the choice did not lie between irreligious normality and religious neurosis, but between a neurotic and psychologically abnormal type of religion on the one hand, and temperamental melancholia and insanity on the other. It seems probable that it was religion, and religion only, which kept them sane, and which enabled their lives on the whole to be spiritually fruitful, instead of being a curse and a source of misery to themselves and to their friends. The record of the life of S. Catherine of Genoa is certainly an amazing example of the triumph of the spirit over the weakness of the flesh, and it seems probable that apart from religion she would have been simply an ailing and neurotic woman.

It has often been noted as a weakness of the New Psychology generally that, in the words of Dr. Brown, "conclusions drawn from the study of nervous and mental diseases have been freely applied to the normal mind," and that, to judge by the analogy of the distinction recognized in ordinary medicine between pathology and physiology, the explanation of the normal in terms of the abnormal is scientifically unsound.* A similar weakness has not infrequently marked the procedure of writers who have dealt specifically with the psychology of religion. Starbuck generalized over-confidently from the results of a study of the phenomenon of adolescent conversion as exhibited by persons brought up in the atmosphere of American Protestant sects, without sufficiently considering how far the regularity and constancy of the phenomenon in question might have been at least partly the result of the continuous

* W. Brown, M.D., "The Practice of Prayer considered from the Standpoint of Psychology," in "Religion and Life," by various writers (Oxford, Basil Blackwell, 1923), pp. 48, 50.

suggestion brought to bear upon the subjects of such conversion, to the general effect that conversion was what was expected of them. The well-known standard work of William James, "The Varieties of Religious Experience," in like manner draws its instances too predominantly from the field of a particular type of Christianity, and taken as whole, suggests the impression of a collection of interesting abnormalities, by which the attention both of the writer and of his readers is diverted from the consideration of the more normal types of religious experience. Nevertheless, no modern teacher of religion can afford to neglect this literature, and more recently works of a more balanced type have been produced, among which may be mentioned "The Religious Consciousness," by Professor J. B. Pratt, and "An Introduction to the Psychology of Religion," by Mr. R. H. Thouless.

It is, of course, particularly in view of their bearing upon the problems of Moral, Ascetic and Mystical Theology that the researches of modern psychologists are of importance to the Christian theologian. There are obvious analogies between psycho-therapy and spiritual direction, and between psycho-analysis and the practice of confession. The value of spiritual direction in many cases is suggested by the phenomenon known to psychologists as "rationalization," especially the so-called "defence reaction" or tendency of the mind to elaborate excuses and "reasons" of a more or less respectable kind for behaviour to which a given individual is strongly tempted, and which nevertheless a moral judgment unsophisticated by passion would perceive to be morally wrong.* Quite clearly the

* Cf. Tansley, "The New Psychology," pp. 182 *sqq.*

tempted individual is not always the best judge in his or her own case, and a trusted adviser may in such circumstances be of service in helping to straighten out a perplexing casuistical problem. It should be obvious, at the same time, that the aim of direction should not be to foster dependence, but to build up and strengthen the character. In the region of *moral* theology, at any rate, the aim of the director of souls ought to be to render himself, as far as possible, unnecessary. In the region of *mystical* theology the case may be otherwise, and it is probable that religious persons of a mystical and visionary type may have permanent need of a skilled spiritual adviser, though in the Church of England at least there are relatively few spiritual guides with the requisite training, spiritual insight and practical wisdom to render them fit to undertake such an office. The common-sense advice given by an ordinary confessor in dealing with the more elementary stages of the spiritual life is a different matter, and in the case of large numbers of those who are accustomed to practise confession the value of the process lies rather in the definite avowal of moral and spiritual sin and shortcoming, and the definite absolution pronounced in the name of God and of the Church, than in any very definite spiritual direction which may be given. Despite the superficial analogy between the two processes, such a practice is quite different from psycho-analysis, and tends to render the latter unnecessary. The two are related as prevention is related to cure. Confession, which is adapted, in Shakespeare's words, to

Cleanse the stuff'd bosom of that perilous stuff
Which weighs upon the heart

breeds the habit of candidly and honestly facing the problems and conflicts of the inner life, instead of thrusting them down as "complexes" into the subconscious regions of the mind to prove sources of subsequent trouble. "Simply on the psychological level," writes Mr R. H. Thouless, "the value of confession appears to lie in the fact that it maintains a predominantly healthy-minded attitude towards sin, as well as providing a disciplinary remedy against it. It may, of course, be disputed how far it is successful in this, but it certainly succeeds in some measure, and its effective replacement is a real problem in applied psychology for those forms of religion which have dispensed with it. Amongst melancholiac asylum patients the obsession that they have committed the unpardonable sin and are therefore for ever cut off from the hope of God's forgiveness is very common. Yet the authors of the *Dictionary of Psychological Medicine* state that they have only met with one patient suffering from this obsession who was a Catholic, all the others were Protestants. There is little doubt that these facts are important, but it is impossible to make a fair inference from them unless we take into account those persons to whom confession must have been habitual who nevertheless suffered from scruples which remind us of the obsessions of Bunyan. Such a case, for example, was St Alphonse Liguori. It is to be hoped that further impartial observations may throw additional light on this question." *

With regard to such practices as those of worship, meditation and prayer, the psychologist as such is pre-

* R. H. Thouless, *op. cit.*, pp 56-57

cluded by the limitations of his science from considering anything more than their psychological effects upon the persons who engage in them, and the psychological bearing of the methods by which such effects are produced. Professor Pratt draws a rough but important distinction between two types of worship which he calls objective and subjective worship respectively. Putting it quite crudely, he describes objective worship as being that of which the leading idea is to have in some way an effect upon God or to communicate with Him, subjective worship as being that which aims directly at the edification of the worshippers, which seeks to produce an effect upon *them*. Roughly, but not altogether fairly, he characterizes Protestant worship as subjective and Catholic worship as objective in its general conception. As Mr. Thouless points out, "the practical problem of religious worship arises from the fact that the subjective effect of objective methods of worship, although not aimed at directly, is found to be great, but, at the same time, these methods are ineffective if not accompanied by the belief in their objective value. Pratt says that so excellent in producing subjective effects are the objective methods of the Catholic Church that a benevolent atheist might conceivably do his best to forward the interests of Catholicism. If he were a wise as well as a benevolent atheist, however, he would probably keep his views of the truly subjective nature of the worship to himself. Otherwise, the desired result might become almost unattainable." * As the writer of the Epistle to the Hebrews expresses it, "he that cometh to God must believe that He is, and that He is the rewarder of them

* Thouless, *op cit.*, pp 160-161

that diligently seek Him."* Regarded as purely subjective, prayer and worship are both alike reducible to simple processes of auto-suggestion, and it may be doubted whether either the one or the other would continue to be practised, at least in forms which at every turn imply that they are more than this, when once the fraud, so to speak, had been discovered

There can be no doubt, of course, but that in prayer and worship, and particularly in public worship and prayer, suggestion and auto-suggestion are brought into play. A gathering of people, especially if consciously animated by a common purpose, is more highly suggestible than the average of the units of which it is composed, and the associations of a Church building or of a Church service to habitual worshippers are highly suggestive. Habitual gesture and posture, lights, ceremonial, symbolism, incense, music and familiar liturgical language are all means which, employed in varying degrees in different types of Christian worship, conduce psychologically to the production of corporate "atmosphere," and by the slightly hypnotic effect which they probably have upon the majority of the congregation help to break down reserves and inhibitions and to render the worshippers peculiarly susceptible to spiritual suggestions. The moral of this discovery, of course, is that it matters extremely that the service and ceremonial should be æsthetically good, and that the spiritual suggestion which is brought to bear should be true and inspiring.

Nevertheless, no recognition, however frank, of the part played by suggestion in worship and prayer can amount, of itself, to an adequate theory of prayer. It

* Heb xi 6.

has been argued with force by Dr Brown that it would be truer to say that auto-suggestion is prayer than that prayer is merely auto-suggestion. Dr Brown points out that the attempt to employ suggestion is usually a complete failure in cases in which the patient regards it as a kind of trick, a mere gesture of make-believe in the face of a wholly irresponsive and mechanical Nature of Things. Successful suggestion is found to involve at least the subconscious or implicit belief that the Universe is responsive and friendly, and commonly leads on, even in cases in which there was no explicit faith to begin with, to a definite belief in the reality and responsiveness of God. "It would look," he writes, "as if religious conversion, so far from being a symptom of a diseased mind, is a phenomenon of the recovery of psychological health. Psychologically, it is the passage of the personality from its previous state of 'conflict' and 'dissociation' to a state of unification." *

Reference was made at the beginning of this lecture to the impossibility of finding in psychology a direct basis upon which to build up a theological system. The reason is that Theology involves *ex hypothesi* a doctrine of God, whereas all that Psychology can provide is a doctrine of man and of human behaviour, regarded from a particular point of view. The maximum service which can be rendered by psychological research, on the most optimistic view, to theological apologetics is to exhibit the adaptability of religion to human nature and its beneficial effects in the integration of personality. It is the ancient argument of Tertullian, the *testimonium animæ naturaliter Christianæ*. But the argument is

* Cf. Dr Brown's article, already referred to, on "The Practice of Prayer."

double-edged. There are those to whose minds it suggests a presumption that the fundamental presuppositions of religious belief are true. There are others, more sceptically disposed, who are apt rather to conclude that man has invented the gods because he needed them, because the hypothesis of the Divine corresponded at a certain stage of his development to the insistent and partly instinctive demands of his own nature. In both cases the attempt is being made to draw valid inferences from purely psychological premisses with regard to a subject-matter upon which Psychology, as such, throws no direct light. The psychological efficacy of a particular belief can afford no direct evidence, either positively or negatively, with regard to the truth or falsehood of the belief in question. The theological and philosophical issue of theism must be fought out, the case for or against the specific theological or historical doctrines of a particular religion considered, upon quite other grounds than those afforded by Psychology.

What the study of psychology by itself is able to do is not to establish truth, but by its doctrine of "rationalization" to supply a plausible explanation of error. It is accordingly both natural and inevitable that to-day a psychological explanation should be invoked to account for the prevalence of doctrines which by any given writer are regarded as false. In a book published in 1922 by two authors who have been recently taken from us, the late Rev. C W Emmet, whose untimely and tragic death is so grievous a loss both to Oxford and to scholarship, and the late Miss Lily Dougall, who also of late years had become well known as a writer on theological subjects, it is contended that the belief

in Divine Retribution and in the coming end of the Age and the Judgment of God, characteristic alike of late Judaism and of early Christianity, has no other basis than in the subconscious desire of an oppressed nation and of a persecuted Church for the punishment of the oppressor, and is to be explained as a "compensating fantasy," subconsciously "projected," and "rationalized" as a belief in the Divine Righteousness*. The argument is a dangerous one, and could be applied, I fear, *mutatis mutandis*, to the theology of the writers themselves. The belief, it might be maintained, in a God in whose character there is no element of "wrath" against sin, a God of sheer benevolence and pity, who regrets the consequences of sin without raising any awkward questions of human responsibility or of moral retribution and of justice, is itself to be explained as a "compensating fantasy" elaborated and projected into the region of the ideal as a refuge from the stern realities of life.

Some such account, not merely of particular religious beliefs, but of religion in general, is in fact the account which is inevitably given, from their own particular standpoint, by psychologists who reject the religious hypothesis, and who are hostile to religious belief. Thus by Freud and his school it is argued that religious belief is a "projection" upon the universe of man's own inner feelings, that dependence upon God is a psychological "regression," a piece of "infantilism," i.e., a recurrence to the standpoint of childhood, in which the individual unconsciously seeks from an imaginary God the support and protection which he

* The reference is to "The Lord of Thought," by the late Miss Lily Dougall and the late Rev C W Emmet

formerly sought from his parents. The account given of religion by Tansley in his widely read book, "The New Psychology and its Relation to Life," is more or less of this nature. He concedes, as a pragmatist might, the right of individuals or of societies to believe in any kind of a God which they find helpful, with apparently complete theoretic indifference to truth, and writes that "it cannot be doubted that God has been a necessity to the human race, that He is still a necessity, and will long continue to be. If all religious tradition had been destroyed at any given moment and a new generation brought up in ignorance that it had ever existed, it can scarcely be doubted that a new religion, of substantially the same type, though varying in form according to the epoch, would have appeared. If this be so, we cannot deny the 'truth' of the substance of religion, though we may criticize many of its forms. All universal and self-consistent expressions of the activity of the human spirit have a claim to the name of 'truth.' It is clear, of course, that religious truth is incommensurate with scientific truth, just as, for instance, mathematical truth is incommensurate with artistic truth. Though each may be abused and show themselves in unworthy or childish forms, projection seems to be as inevitable a function of the human mind as rationalization, and we cannot look forward to a time when either will fall into disuse." *

It is obvious that neither Religion nor Theology can be content with such pragmatic patronage as that of Tansley, and the theologian might retort to the psychologist's explanation of the state of mind of the religious believer by suggesting a psychological explanation of

* *Op cit.*, p 161

the state of mind of the psychologist. The game is obviously one at which two can play, and the rules are few and easily observed. The tendency of the specialists in any given subject-matter to explain all things in heaven and earth exclusively in terms of their own particular specialism is known to psychology as mono-ideism, and it is a disease from which psychologists are not exempt.*

To any one who has had a philosophical education it is obvious that the language and terminology employed by writers on psychological subjects is even more highly metaphorical and fluid than that of scientific writers generally, that much of their thinking is picture-thinking, and that they are in many cases greatly at the mercy of their own metaphors and in need of a rigorous criticism of their categories of thought. A great deal has been achieved which is probably of permanent value, but psychology is still at the stage of struggling for recognition and status as a science, there is abundant divergence of view between leading psychologists, and revised theories succeed one another with quite astonishing rapidity. From the point of view of the relations between Psychology and Theology it is fortunate that both theologians and scientists have learnt lessons from the now half-forgotten controversies of the past. The theologians have shown themselves open-minded, sympathetic, and ready to learn gratefully from the researches of the psychologists, even at the present early stage in the development of their science. In some cases, indeed, there has been even a

* For a more respectful and serious attempt to deal with the insinuation that belief in God rests ultimately on an illusion, see the Rev H Balmforth's book, "Is Christian Experience an Illusion?"

somewhat too uncritical enthusiasm displayed by theologians, a disposition to anticipate more in the way of theological illumination from the study of psychology than psychology can ever reasonably be expected to afford, an eager acceptance of psychological hypotheses which, having been formulated yesterday, are in some cases already in process of becoming obsolete to-day. As for the psychologists themselves, it is pleasant to record that many leading exponents of psychological science, at least in this country and in America, have sought rather to interpret religious life on its psychological side—which is their proper function as students of human psychology—than to explain away its theological and philosophical basis—a procedure which would involve what Aristotle would describe as a *μετάβασις εἰς ἄλλο γένος*. In spite of exceptions—for unfortunately there have been exceptions—the tendency of exponents of new sciences to dogmatize outside their proper sphere of investigation has on the whole been less apparent than in the case of some earlier outbursts of fresh scientific activity. I have no doubt that foolish things will continue to be written both by psychologists and by theologians, as foolish things have in some instances been written already. But on the whole the future omens are full of hope.

Nevertheless I cannot end this lecture without emphasizing afresh the point that modern psychopathology is better at diagnosing and seeking to understand the abnormal than at interpreting the normal; and that the majority of people are psychologically normal and not deranged. Amateur students of medical or *quasi*-medical delineations of the symptoms of disease are exceedingly apt to imagine that they

recognize in themselves or in their friends the diseases in question. It has been remarked, I think truly, by the Rev Leonard Hodgson, of Magdalen College, in an article on "The Self and the Unconscious" in *The Hibbert Journal* for July, 1922, that the fear of neuroses and of other psychological bogies of various kinds plays much the same part in the life of the modern world as was played by the fear of demons in antiquity, and he suggests rightly that just as the religion of Jesus Christ showed itself capable, in the earliest generations of the Christian era, of liberating the human soul from its bondage to superstitious and demonic fears, so to-day it is capable of delivering men (and women too) from the fear of neuroses and the incubus of self-interested anxiety about their souls, from the "phobia" of "complexes" and from the terror of "inhibitions." I venture to think that the great "integrator" of personality and the great deliverer from psychological terrors and obsessions is still, and will always be, a sane and confident faith in the love, reality and power of the living God whom Jesus Christ reveals, and who through the active agency of the Holy Spirit brings power and discipline and love into human lives.

VI

PSYCHOLOGY AND EDUCATION

BY M. W. KEATINGE, M.A., D.Sc.

EDUCATION is a branch of sociology. It deals with the environment and influencing of the growing boy and girl and includes the mental development of the adult, which in a well-ordered society should not end when school and university courses are completed, but extend throughout the whole of life. It has to consider the ends and aims of school training, and since education, unless it is a mere convention, should stand in the closest touch with life, the subject-matter of educational theory is co-extensive with a theory of life. Further, when these ends have been established it has to consider the nature of the human being who is to be guided towards them, the motives that prompt his actions, and the basis on which have to be built up the techniques that are essential.

1. During the past thirty years, for the first time in history, a systematic theory of education has been coming into existence, and we find ourselves at the beginning of an educational revolution whose effects on human life will be at least as far reaching as the industrial revolution of the eighteenth and nineteenth centuries. In both cases the causes of the revolution are similar. The industrial revolution was produced by the sudden development and application to manufac-

tures of natural science. Branches of knowledge which up to that date had been only of academic interest suddenly began to apply to the moving and manipulation of matter, and in consequence produced commodities and transported them with an efficiency hitherto unknown. In precisely the same way educational theory, which in previous centuries was either traditional or ineffective and negligible (for in every generation certain people have talked about education, and in every generation no one has listened to them), has suddenly become effective. It has begun to grip the facts, and the reasons are the same. The sciences with which education is closely linked, social ethics, economics, biology and psychology, now throw such a strong light upon the facts and aims of human existence that it is becoming possible to aid and control human nature in its progress towards well-defined aims.

In making what use it can of other sciences Education is following the practice of medicine and engineering. It has a practical aim and, while like other applied sciences it can and does conduct investigations of its own, its starting point for all that concerns its aim is the purer sciences of social ethics and economics, and for its means biology and psychology. It is thus clear that education is not co-extensive with psychology and the biology which is so intimately connected with it. Psychology aims at making human beings understand themselves, and enables the educator to understand the material with which he has to deal. It does not directly determine the ends of education, and these are, if anything, the more important part of educational doctrine. And yet, although the aims of education

have to be considered from a philosophical rather than from a psychological standpoint, a treatment of the more immediate aims in education is impossible without psychology. It will be made clear, in this paper, that the texture of educational thought is largely psychological, and that if we are to talk or think about education at all, it is only in the light of psychology that we can do so accurately and effectively. To avoid being merely allusive only a few points in the very wide field will be dealt with.

2 Why did the older psychology fail to give much assistance to the educator, and what are the features in the newer psychology that make it one of the bases of education? Why is it possible for a current text-book of psychology for communists to say "Psychology is a no less essential ingredient in the fighting culture of the proletariat than biology and economics. We proletarians have to understand the workings of our own minds, to understand the workings of our enemies' minds, to understand the workings of the minds of those who will side either with us or against us as the efficacy of our own or our enemies' propaganda may determine. Such things can only be learned by the study of psychology"? * If you take up a treatise on psychology written before 1860,† the answer to this question will be clear. You will find some rudimentary physiology which throws absolutely no light on the working of the mind, a description of the senses which is little more helpful, on account of the various forms of association, a description of emotions such as novelty, surprise and wonder, admiration, reverence and esteem,

* Plebs "Text Book of Psychology," Preface.

† Bain's "Mental and Moral Science"

an account of theories of beauty, a few remarks about imitation and a section on will of which it is said "that the distinctive aptitude of the mature will is to select at once the movements necessary to attain a pleasure or relieve a pain." The appetites are defined as "a select class of sensations," and the instincts, which are not classified, are little distinguished from reflex actions. Attention, the centre point of educational psychology, is dismissed with the statement that "the will can influence the train of thoughts through attention", and there the matter is left. The whole is a mere list of mental states, no attempt is made to bring them into a connected whole or to ask what is the unifying element, and the general tendency is mechanistic. The analysis is not profound and is not connected. It treats of the adult mind only and of this as at rest and not as in action.

There are so many confused tendencies in modern psychology that it is not easy to show except in greater detail than here is possible in what ways it differs from the older doctrine, but a brief statement that is not unduly misleading can be made.

- (1) The leading schools of psychological thought lay little stress on physiology as an explanation of mind
- (2) With the exception of the behaviourist school in America they are on the whole not mechanistic
- (3) Mind is treated as active and purposive, not as a machine at rest, and great stress is laid on instinct as a primitive state which helps to condition purpose. The basis of the Freudian school of psycho-analysis is an extreme development of this purposive aspect.

- (4) Careful observation and interpretation of behaviour have taken the place of mere introspection.
- (5) This observation is extended to children and to animals
- (6) Much of this observation is very detailed, as in the case of intelligence tests, and the use of correlations introduces a mathematical treatment.

In general the effect upon the mind of a person not very well acquainted with psychology who read Bain's "Mental and Moral Science" side by side with MacDougall's "Outlines of Psychology" would be as follows. In perusing the first he would have a confused feeling that the subject-matter ought to have some bearing upon life and conduct, but that for some reason difficult to grasp it seemed to have no bearing at all. He could not read the second without realizing that in spite of much contentious matter there is scarcely a page that does not bear directly upon the nature of mind and conduct and the possibility of influencing them.

3 It is now time to come to detail and choosing a few topics in educational psychology to show how modern doctrines of mind are in process of improving faulty educational methods and helping to retain and develop those that are good, how they show up knavish and idle teachers who, sheltering themselves behind convention, sacrifice the good of others to their own dislike of trouble, and how they hold in check the quarter-truth epigrammatists who, when they write about education, obscure the issue by a fog of cheap witticism and cynicism. For cynicism and

undue optimism are alike the foes of ordered educational progress

An analysis of the conditions of attention will serve as a starting point.

If you turn to the "Great Didactic," the remarkable treatise on education written by Comenius in the seventeenth century, you will find an attitude towards the subject of attention that is characteristic of the older psychology. Comenius describes his ideal classroom. The boys in it sit in rows in a large room. It makes no difference what their number is, for Comenius believed that if a teacher's method was a sound one, one teacher could teach an unlimited number of boys. The teacher sits on a raised platform at the end of the room and the boys, in the words of Comenius, "place their attention like a wide-mouthed phial beneath the words of wisdom that flow from his lips." Here you have the doctrine of the mind as merely passive and receptive. It makes little difference whether the analogy of a wide-mouthed phial is used, the pupil's mug being filled from the teacher's jug, or that of a blank sheet on which the teacher inscribes the subject-matter of instruction. In either case the implication is the same, that of an inert mind which is operated on by external stimuli.

The modern doctrine of attention is widely different and so are its educational applications, as a short analysis of a fact of attention will show. Imagine that you are reading an interesting novel and *ex hypothesi* are absorbed in it, what are the conditions and the nature of your mental process? You have just read the following passage: "'My God!' he said in a hushed and trembling whisper, and she gave no sign that she heard. She might have fainted but that her eyes glittered out of

the shadow straight and steadily into his." Why, instead of leaving off, do you go on to read the paragraph that follows? Because you want something. You want to know if she actually had heard, if she actually did faint and how long her eyes continued to glitter into his. Supposing these wants to be satisfied, do you continue to read or do you not? If the novel is well constructed, you do not lay it down at the conclusion of the short episode, you continue to the end of the chapter. The reason is that another want has asserted itself, the want to know how the sub-plot, with which the chapter is conceived, ends. When you have finished the chapter, do you throw the book away? *Ex hypothesi* you do not. Another want which has been lurking in the background makes itself felt, the want to know how the problem with which the novel began is solved in the last chapter. You know the way in which stories of a certain type begin. The scene is at Monte Carlo. The hero and a friend drive to a well-known restaurant. The hero goes in to see if there is any room, and on returning to the taxi finds his friend gone, and in his place a lady in evening dress, stabbed to the heart. Here at once is formed the want which carries you through the sleeper portions of the story, the want to know how the mystery is cleared up at last. "What I like about your stories, old man," says one character to another in a recent American novel, "is that the hero never grabs the girl till the last page." In other words, the want is kept going to the end.

Here then is one of the conditions of attention: a felt want and in most cases a hierarchy of wants, some of them nearer to and others further from the centre of consciousness, but between them exercising an irresistible

pull from in front. All attention will be found to be due to this condition. I am attending to my subject and to my audience, and I am doing so because I want to make clear the connexion between psychology and education, and this is the want nearest to my consciousness, but there are many other remoter wants working in with it. My whole philosophy of life, for example, which makes me want in every way to further interest in education is exercising a powerful pull in the background and helping my more immediate want.

Attention must then be considered as due to a system of wants. The stronger those wants, the greater is the attention and the more intense the state of consciousness that they evoke. For consciousness is difficult to conceive of as existing independently of some want. Imagine a very diffuse state of consciousness. You are lying half asleep in a warm bath. What is the want on which your consciousness depends? You fear that the water is growing colder, which is the obverse of a hope that it may remain warm. When hoping or wanting or fearing ceases, consciousness ceases also. The central theme of Balzac's "*La Peau de Chagrin*" illustrates this in its own curious way. A needy young man without a *sou* enters a curiosity shop and is told that for the asking he may have a piece of shagreen skin endowed with this magic property—that every wish of its owner is granted. There is certainly a drawback, with each wish the skin contracts, and when, finally, it shrinks to nothing the owner dies. The second part of the story introduces the reader to the former needy adventurer installed in a magnificent mansion. He has planned out a peculiar mode of life in which all his conceivable wishes are forestalled. His manservant

when he calls him in the morning may not say, "At what o'clock would Monsieur like to breakfast?" He has to give orders. "Monsieur will get up at 7 30. He will have his coffee at 8" The servant has to find out what is being played at the theatres, and to say, "Monsieur will go to see such and such a play to-night." Evidently the unfortunate young man is trying to make the skin, and with it his own life, last as long as possible. A former tutor who contrives to force his way into the house implores his assistance in obtaining a post. Moved by the distress of his old friend he discusses the situation and dismisses him with the words, "I hope you will obtain the post you desire" Scarcely has he uttered the phrase when he rushes to the wall, on which hangs the shagreen skin stuck on to a white sheet of cardboard, with a black line drawn round it. It is as he feared, the skin has shrunk, and a white margin is visible between its edge and the boundary line. His span of life has been shortened and in anger he turns to upbraid the intruder who has made him express a want and drives him with blows from the house.

Nothing could be less in accord with the facts of mind than this fantasy of Balzac's. The owner of this dangerous skin could have avoided wishing only by keeping himself permanently under an anæsthetic. The waking mind is always in want, and it is on such wants that consciousness and attention depend.

To return to our first illustration. We have seen that attention to a printed page depends upon our desire to know what is to follow. There are two other conditions of attention which stand out clearly. We do not read every word on the page. Our mind is selective and selects the few important words that give

the key to the development of the narrative. It is indeed strange that up to the present no novels have been produced with the words to which attention need be given printed in red, for in this way the confirmed novel reader might immensely increase his consumption of fiction. Now it is clear that unless attention were selective, mental process would be impossible, since the goal aimed at restricts and controls the scope of attention. I am looking at my hearers. If I were an anthropologist I should be attending to the shapes of their heads and the colour of their eyes and hair. If I were a criminologist I should be eagerly scanning their faces for some illustration of criminal traits. As it is, my aim being solely to make my meaning clear on this topic, I am looking only for evidence of that earnest and discriminative attention which has characterized these audiences.

Selection, then, is the second condition of attention. The third is that the immediate objects of attention must change with varying speed relatively to the end or goal sought. In the case of the novel the words on the page embody the greatest amount of change. Next in degree come the small episodes, next come the sub-plots of the chapters, while the main problem or want does not change at all.

From this analysis it is clear that the conditions of attention are a want or a hierarchy of wants, selection and change of immediate objects of attention relatively to the end sought. If any of these factors are lacking, the process will lead to a less rather than to a more vivid state of consciousness. If you go to a psychologist and ask him to hypnotize you, he asks you to attend to a bright light, and in a very short time has

placed you in the hypnotic dream. He has, however, used the word "attend" inadvertently, for two of the conditions of attention are wanting. There is no selection—he has forced on you a single bright spot, and there is no change in the immediate objects of attention. The result therefore of your fixation is not an intense state of consciousness, but the sleep of hypnosis.

Attention, then, is primarily conditioned by wants, and this formula covers the facts of sensorial attention—the tendency to be absorbed in things that move, that sound loudly, or shrilly, that are glittering or brightly coloured. For these tendencies represent a group of racial wants that have been ingrained in the mental system of the race by experience and, in part, by selection.

When applied to classroom instruction this doctrine demands a kind of teaching wholly unlike the mass-lecture method of Comenius, wholly unlike the methods used in most of our elementary schools, or the methods used for the teaching of many subjects in our secondary schools. The problem is to produce wants or aims in each individual pupil and to organize a course of problem work along which he shall move using his wits to the full and selecting and marshalling his raw material in his struggle to reach the goal set before him. For educative attention embodies a feature which was absent in the case of the novel. The selection and the changes in the objects of attention should be produced not by the skill of the writer or the teacher, but by the efforts of the attender. Individual work by the pupil and not mass-class teaching stands out as the really important thing, and though class-work will always

be necessary, its function is to prepare for individual work of the problem kind. Even where class work or a lecture-lesson of the more conventional order is concerned the doctrine lays stress on elements frequently neglected. A lesson must be arranged and given in such a way that it evidently works up to an anticipated conclusion and thus satisfies a want. Similarly it must be clear that each lesson leads up to and prepares the way for the next, and that the whole series of lessons and indeed the whole curriculum leads up to and throws light on some aspect of nature or human nature, thus evoking and satisfying a hierarchy of wants in the pupil. In other words, the main business of the teacher is to be a far-sighted organizer of his subject, and to make his pupils want to journey with effort through the obstacles that he has placed on the narrow path that leads to the goal. Other things being equal, which they seldom are, the better organiser is the better teacher. For such organization a teacher needs himself the forward glance to the distant end. Unless he has it himself he never will produce it in his pupils, and it is on this forward glance that mental and moral progress depend. How and by what gifts of sympathy and suggestion the necessary "wants" are to be produced cannot here be discussed.

4 A matter of education much discussed at the present moment is that of school discipline. Should young people, as in the past, be governed by an autocrat, or should they govern themselves? The question is to some extent a political one, indeed it was treated as such by Mulcaster, the first headmaster of Merchant Taylors' School. In his "Positions," written in 1581, he asks how "in the present glut of scholars" the boys

suitable for a prolonged secondary education should be selected. After pointing out that there are three kinds of government, monarchy, oligarchy and democracy, he says "All these three be best maintained by those kinds of wit which are most proper for that kind of government wherein they live But because the government of our country is a monarchy I will in choice seek out that kind of wit which best agreeth with monarchy. The child, therefore, is like to prove in further years the fittest subject for learning in a monarchy which in his tender age showeth himself obedient to school orders and who is gentle and courteous to his companions" *

With democratic institutions in school Mulcaster, as a benevolent autocrat, would evidently have had no sympathy, and it is clear that political considerations cannot be excluded from a complete treatment of school government. If school is to prepare for life and if life is to be passed in a self-governing democracy (making all allowance for the variety of meanings that lie behind this phrase), the political instincts of schoolmasters will make themselves felt in the precise degree of self-government that they permit But we are dealing with psychological backgrounds, and ask, quite apart from all political considerations, what can the schoolmaster who is thinking of adopting some measure of self-government learn from psychology?

In an unorganized crowd the emotions of each member of it are excited to a pitch of intensity which would not be found in the individual separated from the crowd Waves of fear, of anger, of despair, of enthusiasm, of joy sweep through a mob like fire

* Mulcaster, "Positions," 1581, ch 37

through a pile of dry tinder. In the mob, quite apart from any conscious direction, the spark is passed on from one unit to the next in a mysterious manner that is probably due to a gregarious instinct. Indeed Rivers has gone so far as to maintain that what is commonly known as suggestion is the force that links the group together and makes it act as one. Whatever the channel of communication may be the result is certain. A mob is readily swayed by emotion, it moves with irresistible force in the direction which its mood dictates. When once it has embarked on a course of action it is difficult to deflect or to control, for this intensified state of emotion has its correlative. The intelligence of a mob is as much depressed as its emotional power is exalted. You cannot reason with a mob. The practised mob-orator does not waste his time in sequences of argument. He appeals to the emotions and takes it for granted that the more intelligent units before him are temporarily deprived of their reason by the proximity of their unthinking and excited neighbours. His arguments will be personal allusions and flattery, his proofs will be abuse, and his inferences will stand in no connexion with the statements that precede them. Now this fact of gregariousness, that the individual tends to react to a given stimulus quite differently when he is a unit in a crowd and when he is isolated, cannot be neglected by the schoolmaster. Gregariousness works both for good and for evil. An impressive teacher will produce effects on a class as a whole and on each unit in it, which would be impossible were he teaching one boy. If he is a man of sufficient force he will find that the group self-consciousness of his boys is a help to him and that their

group loyalty is a force that he can direct. But there is a reverse side. An unorganized group is very suggestible and can be made to feel the force of truths which they do not understand, but such impressions are apt to be fleeting and to leave little trace in the individual after he leaves the group. Further, group loyalty, as its name implies, is not loyalty to the authorized teacher, but to the other members of the group, and if it is directed against the teacher may lead to difficult situations. Boys who would not misbehave or tell lies as individuals will do both as units in an unorganized mob-group. A sympathetic master, it is true, may guide the group interests and loyalty into his own channels, but the persistence of the unorganized crowd can never be relied upon to last, and it has a capricious way of attaching itself to ends which a passing fancy dictates. There is a story of a sixth form in a great Scots boarding-school, who were under the tutelage of an English form master. He was not sympathetically disposed to certain aspects of the Scots genius. He was fully aware, so he assured his form, that nothing short of a surgical operation could get a joke into a Scots man, and that for a Scots boy more drastic measures were needed. After this preliminary the class proceeded to read Aristophanes with him. But they made up their minds that no power on earth would induce them to laugh at any of the jokes, which in fact made a very strong appeal to them, and thus for the whole of one term the master laughed heartily at Aristophanes's humour and interspersed his laughter with comments on Scots obtuseness, while his boys with serious faces and set wills applied themselves to the task of refusing to be amused.

It is here that the analysis to which the group mind has recently been subjected may be suggestive. It has been shown that the collective life of an organized group whose organization is imposed from without is very little better than that of a simple crowd. For true organization the impulse must come or must appear to come from within. The purpose for which the group exists must be thoroughly realized and must be accepted by each member of the group. There must be a sentiment not only for the group but for the common purpose; and when each member identifies himself both with the common motive and the interests of the group it is for the first time possible to speak of a collective will.

Interpreted in school practice this doctrine gives the following positions. 'The class-group must be made to understand and to appreciate the aim in knowledge set before it. So much must it acquiesce in this aim that the impulse must seem to come from within rather than to be imposed from without. The aim in knowledge must be realized as a common aim that can be reached collectively only by the co-operation of units.

In the working out, for example, of the task in history assigned for a term, each member of the class, or each of the small groups into which the class may be subdivided, must have its allotted task which must be perfected and ready at a certain point in the development of the subject. One individual or group may have to be ready with the life of a character in the historic drama, another with a lecture on the music or the art or the ships of the age, another with drawings of local buildings which throw light on history or architecture, another with a brief sketch of the develop-

ment of some institution during the three or four centuries preceding the period. Such a method presupposes an adequate class-room library or other necessary apparatus and the substitution of what may be called laboratory work for much of the conventional class-work. It means that boys will be doing much private research of a kind and working at their own pace to get ready material that may be needed by the teacher. On the part of the teacher it demands careful organization, and here as elsewhere it becomes apparent that the good organizer is the good teacher. When such a class has been organized to work as a group for an end accepted collectively and individually it may well be trusted, within limits, to keep itself in order and to assess and inflict punishments for idleness or for conduct which interferes with the attainment of the common aim. And to the criticism that a class-room court entrusted with such duties will be successful only with a strong though unrealized guiding influence behind it, it might be replied that precisely the same conditions are needed for the success of democratic self-government in a modern state.

It is thus clear that the educational implications in the psychology of the group mind are numerous, and that any critical study of the attempts now being made to introduce self-government into schools is impossible without reference to this mental background.

5 We have alluded to the gregarious instinct as the basis upon which the group is built up. The doctrine of instinct, of natural tendencies, is one of the characteristic chapters that distinguishes the newer from the older psychology. Not that a clear conception of what instinct is has yet been formulated. Some writers

attribute to man as many as eighty primitive instincts, while others are satisfied with seven. These discrepancies are, however, superficial, and in the main there is agreement about the nature of the fact to which the term instinct may be applied. { Instinct is distinguished from reflex action, in that it is accompanied to some degree by conscious purpose; it is independent of individual experience and as a racial inheritance can function immediately after birth, as when a chick just out of the egg pecks at the grains of food provided for it. Ready-made tendencies of this kind represent the original nature of animals and of man as opposed to the accretions of personal experience that cluster around them, and for the educator it is clearly desirable to know the original nature of the young people whom he has to guide. Rousseau was of opinion that all children were born good, others, speaking no doubt from experience, have believed that on the contrary they were all born bad. What progress did natural science make as long as it based its procedure on loose opinion of this kind? and what progress can education make unless it is at pains to know the precise nature of the raw material entrusted to it, and on this basis decide what is to be developed and what to be discouraged? Without this knowledge education must surely fail to attain its high aim.

The consideration of a few instincts will show how a study of their nature will protect a teacher from sentimentality and from foolish optimism, and may disclose to him motive power which might otherwise be unnoticed. Emulation, curiosity and the desire to collect are natural tendencies which it will serve our purpose to consider.

Emulation is derivable from the more primitive tendency of combativeness, which in turn traces its descent to the spirit of self-preservation. That some such tendency is natural and belongs to man's original state is a point that does not need emphasis. Without the wish to survive, at the cost of others and in defiance of unsympathetic natural surroundings, primitive men and primitive groups would have succumbed to the forces opposed to them. The spirit of emulation which is such a feature of many societies owes its existence to the early struggles of the race, and thus its existence is eminently natural. Now there is an attitude adopted by sentimentalists towards emulation in schools which may be summarized as follows. "Society," they say, "is brutalized by being competitive and acquisitive. As soon as a boy leaves school he will find himself in surroundings which force him to bare his claws and fangs and fight for his existence. While he is at school let him enjoy a brief period of freedom from these sordid conditions. Let emulation be vetoed, let him work at school subjects not for the sake of winning more marks than his fellows or of heading the list at the end of term, but from the sheer intrinsic interest of the subject or with the aim of developing his own personality."

There comes to my mind a story which I hope is true. It relates to a Rhodes scholar who some years ago came to Oxford. The testimonial with which he was supplied brought to a conclusion the recitation of his merits as follows. "He is merciful to those weaker than himself, has never been allowed to compete with anything except the ideal of his own personality and—has a reasonable prospect of passing responsions."

Here of course lies the danger. If you neglect or try to suppress such a sturdy element in the original nature of man as the spirit of combativeness you may reap a crop of inertia and idleness ; and in many cases it is far better that a boy should work with maximal effort from a motive which is not the highest than that he should idle because a higher motive does not appeal to him. Certainly the spirit of emulation must be kept in check. We study instincts not to indulge them, but to use them for our own purposes, and in some cases instincts have outstayed their welcome. But if we do not face facts the door is open to sentimentality, and then education becomes impossible.

The next item on our list is curiosity. In any classification of instincts curiosity is difficult to place with accuracy, since from its nature it is more akin to intelligence than to the blinder tendencies. But, however it should be classified, there can be no doubt that it is part of man's original mental constitution. Both savages and children display curiosity, though in the case of the latter it is always noticeable that a child takes little interest in the answer given to his question, but proceeds to ask another. The value of studying this instinct lies in the modification of undue optimism. The older school made its pupils do little but learn by heart, and when modern subjects like natural science were introduced the first tendency was to teach them on the lines of the older subjects ; to demonstrate experiments and make the boys assimilate them. This method was obviously unsuitable for natural science, and a new mode of attack, that of investigation, was suggested, and by the introduction of school laboratories was made practicable. But the first advocates

of investigation methods went too far. They professed that boys ought to discover everything for themselves, they grossly overestimated the latent fund of curiosity possessed by the average boy, and in consequence they very nearly discredited the method that they were advocating. A little consideration shows that there are reasons why one instinct may be weaker than another, and curiosity is evidently a natural tendency that may be of questionable value in primitive conditions. Primitive races are conservative because it is dangerous for them to leave the broken path, since a too great curiosity may well prove destructive. The savage who climbs up the side of a volcano in eruption and looks over the edge to see how it works will probably not return, and unless he has already reproduced his species will have no further opportunity of doing so. Consequently his "curiosity" tendency will not be transmitted, and it is because rash curiosity leads to destruction that this instinct is weak, fitful and unreliable. If the instinct of curiosity were as strong as the appetite of sex there would be no difficulty in inducing boys to conduct investigations. It would only be necessary to turn them into a room with a few pieces of apparatus, or a few books, and to suggest a problem; the urgent drive of curiosity would do the rest. The facts are widely different. Curiosity is relatively weak. The utmost use must be made of it when it exists, and no pains must be spared to strengthen it by suitable methods; but to do this needs insight, a gift for teaching and great ingenuity in devising exercises and organising schemes of work.¹

The third instinct selected as an illustration, the collecting instinct, affords a good example of a natural

tendency which, although extremely educable, does not educate itself, but remains crude and undirected, and unless stimulated tends to disappear. Investigation shows that at an early age, some four or five years, all children are collecting something. Is there any one who does not recollect the indiscriminate collections of his childhood? Who does not remember a small box filled with every kind of casual object—a wheel from a dismantled clock, a portion of a broken cigarette holder, a glass eye from a disrupted doll, a rusty key—which he carried about tenderly and feared to let out of his sight? These objects had no connexion with one another and collectively were of no use, but to amass them and keep them together satisfied the blind instinct to collect in its most primitive form. Later on the instinct attaches itself to well-defined interests, as in the case of birds' eggs and moth hunters, and at the age of about eleven this tendency to collect something is at its height. It then goes down hill, and by the age of eighteen, still more at the age of sixty, no one collects objects that do not stand in some connexion with his aims in life. Here, then, is a tendency which clearly might be made the basis of the scientific collection of subject-matter. Left alone it seldom develops any methodical traits. Some boys simply keep their collections together in a box, others arrange them according to size or to colour. Scarcely ever do they classify them in a scientific manner, and in most cases unless the instinct is cultivated it vanishes altogether.

This is not the place for an elaborate treatment of the use of the collecting instinct in teaching. Only those who have tried it know with what alacrity boys respond to the demand that they shall collect anything

from botanical specimens to groups of synonyms or examples of syntactical usages, and how readily a considerable structure of scientific technique and knowledge can be built up by the exercise of this native tendency. Here it must suffice to quote it as one of the many drives from behind that the teacher can inform and use for his own purposes. For an understanding of the relative strength and value of these "drives" some study of psychology is needed, and in the absence of such knowledge much very questionable educational doctrine has been evolved, as, for example, in the case of the play-instinct and play-methods.

6 The opening years of the twentieth century are notable in the annals of psychology, for it was then that M Binet in France and Messrs Spearman, MacDougall, Burt and others in England made the first systematic attempts to discover and assess the degree of intelligence possessed by any person by an objective psychological method, that is to say, by a method which does not base its conclusions on the examinee's school or professional knowledge. The difficulties of such a task are immense and at the first attack would seem to be insuperable. For (1) it is not easy to say what is meant by intelligence, and (2) supposing a definition of intelligence to be accepted and that a grade of intelligence is assigned to a given person, how is it possible to know that this assessment is correct? Since, if its accuracy is judged by its correspondence with the opinion already formed by schoolmasters and employers, it may well be asked what additional information the intelligence test provides.

Now no universally accepted definition of intelligence has yet been given and few of us would be prepared to

accept as final the opinion of a psychologist upon our degrees of capacity. Yet the attempt will here be made to show that even in their present state intelligence tests can do a great deal for education, and, in particular, that they somewhat unexpectedly give us assistance in establishing aims in education.

The initial experiments carried out by Binet in Paris in 1904 had a practical and a limited aim. Recent legislation had established schools for children whose degree of intelligence was so low that they could not profit by the instruction given in the ordinary elementary school, and some way was sought of selecting these children. Binet accordingly made out lists of questions suitable for each year between the ages of one and fifteen, and proceeded to devise a method of assigning a coefficient of intelligence to each child. If a child's actual age was nine and he could answer the questions suitable for that age, his intelligence quotient was $\frac{9}{9}$ or unity. If he answered those of the eleven-year-old grade his I Q would be $\frac{11}{9}$, while if he was retarded and could get no further than the four-year-old stage his I Q would be $\frac{4}{9}$. The intelligence quotient was thus a symbol which gave at a glance the relation between the mental age and the physical age. In the classification of idiots, imbeciles and morons, the mental age of idiots never rose above two, that of imbeciles above seven, and that of morons above twelve. Now it is comparatively easy to decide without much danger of error whether or not a person is an idiot or an imbecile. It is when we come to the higher-class morons, the

borderline cases, the children who seem dull, but whose dullness may be due to illness or malnutrition or adverse home circumstances, that difficulties arise ; and here the methods devised by M Binet and greatly developed since then in America, and in London by Mr Burt, have been found of real value in giving a reliable and objective standard by which a child can be graded as a moron, who will never rise above the mental age of about ten and who should therefore be assigned to a school for mental defectives

The most striking instance of the use of intelligence tests on a large scale was given by the intelligence survey made of the American Army in 1917. The object was to decide as rapidly as possible which of the recruits were too stupid to become efficient soldiers, and the kind of army work for which each recruit accepted was likely to be fitted. The number of men to be examined was very large and mass methods had to be used. It was found possible for one examiner to test as many as a thousand men in one day, and it is claimed that the result gave an accurate estimate of the grade of work for which in fact each man was subsequently found suitable, and that much time and expense were saved by rejecting at the outset men who later on would have been found not equal even to the demands of a labour corps. Eight grades of intelligence were listed ranging from A to E. "A" men had very superior intelligence and were of the highest officer type, when the other necessary qualities were present. "B + " men were good non-commissioned officer material ; "C" men were good privates. "D - " men were very inferior material ; while "E" men, whose mental age was about nine, were recommended for discharge.

Particularly interesting was the intelligence rank order of the different nationalities represented in the American Army. England headed the list, and the sequence was Scotland, Holland, Germany, U.S.A. (excluding negroes), Denmark, Canada, Sweden, Norway, Belgium, Ireland, Austria, Turkey, Greece, Russia, Italy, Poland. For the sociologist the value of such knowledge can scarcely be overestimated. Of the criminals and prostitutes who have been subjected to these tests, 50 per cent. have a mental age of not more than nine, and it is thus clear that an intelligence survey of the whole community would very materially help the forces of law and order.

What is the significance for education of this new instrument? What it may be in the future it is difficult to estimate, though it is not easy to believe that the highest kinds of ability could be discriminated in this way. At present there can be no doubt that its value for the isolation of defectives is immense, and that it may be of great use in helping to decide which children are fit for promotion from elementary to secondary schools. Recent educational legislation at Hamburg illustrates the importance of such tests. In the Hamburg schools children of ten are divided into two classes. One of these is directed into a five years' course, at the end of which promotion to a secondary school is possible, the other remains in the elementary school for four years. The Hamburg children are thus divided into two distinct groups of which one will remain hewers of wood and drawers of water for the rest of their days, while members of the other have a chance of entering the sphere of professional and commercial life. When such an important decision is being made

it is clearly of the first importance that the method used should be objective and as little as possible open to the chance of favouritism ' For such purposes of scholarship classification, intelligence tests, when perfected, will be invaluable.

It is, however, the value of intelligence testing as indicating aims in education that I wish to emphasize, with the object of showing that the influence of psychology is not confined to the " means " of education It is a feature of the application of scientific treatment to any social process that it brings matters to a head and leaves no doubt about their desirableness or the reverse For example, in the Middle Ages war could be regarded as a pastime because as compared with modern warfare it did relatively little harm Recent experience has shown us that warfare, as perfected by science, is quite incompatible with economic or moral progress, and that if humanity is to be kept on the upward path it must be educated to ideals which preclude war In the same way it may be shown that more precise methods of assessing and classifying ability will demand the intensification of certain ideals

Statistics show that the number of children in a family stands in an inverse ratio to its intelligence and general well-being It is a commonplace of the eugenicist to point out that an imbecile mother and father have on the average seven to nine children, while the uncultivated though not imbecile couple of the handworker class have families of not less than four or five, but that in the professional and intellectual class the children born to each couple vary between three and none. Again, in families where no servants are kept children are numerous, when as many as two or three are kept

the number falls, and by the time the establishment with eight or nine servants is reached there are no children at all. It is pointed out with reason that if this process continues unchecked, if the increase in numbers is chiefly from the less able classes and very little from the more cultivated classes, the quality of the population will alter very much for the worse, and that rapidly. That this deterioration has not been more apparent has been due to the supply in each generation of able youths from the handworker class who force their way up out of their own surroundings to become captains of industry and leaders of the professions. Now consider what the position will be when nothing is left to chance, when there is a combination of the ladder from the elementary school to the University with a method of selection which will infallibly select the really clever boys and feed them up to the professions. They will be removed from a state of life in which marriage is easy because conditions of life are simple, and transferred to one where marriage is difficult because standards of life are high and complex. They will develop a number of artificial needs and will keep servants. In consequence they will tend to have few or no children, and as in each generation the rigorous form of selection which scientific method supplies will ruthlessly comb out the children who show promise and send them to be sterilized in the same manner, the reservoir from which able youths have hitherto been drawn will dry up and the whole population will deteriorate with increased speed. What is the cure for this malady? There is one only, an educational crusade in favour of simplicity of life. Nothing but the restriction of artificial needs will restore to the intellec-

tual classes the proper balance between the claims of the race and those of the individual, and nothing but an ideal developed by education can promote this. It is thus plain that psychological methods through their very accuracy call with irresistible logic for new and amended aims in education.

7. Our last instance will illustrate with still greater force the way in which the accurate statement of a psychological position leads on to and reinforces educational aims. It has long been the habit of educational theorists to teach that the doctrine of formal training as held in the eighteenth century, and by many people now, is false. The doctrine may briefly be stated as follows: Mind is a relatively simple mechanism divided into various faculties which function with considerable independence of one another, faculties such as imagination, memory, attention, intelligence, judgment.* These faculties or portions of the mind may be exercised and improved by working at any serious subject. At the end of the eighteenth century, when Latin had ceased to have a commercial value as a *lingua franca*, some reason had to be given for the maintenance of the classics, and in particular Latin, taught in a not very inviting way, as the main subject in the curriculum. And the reason given was that it made the mind, with its apparatus of faculties and compartments, work, that it set its wheels in motion, strengthened and fortified it. Further, it was taken for granted that the efficiency thus developed could be transferred from the subject that had produced it, the classics, to any other subject; that the man who at school or college had strengthened his mental powers by working at the classics could turn

* Cf. Kant, "On Education," sec. 68.

over to any other subject or any profession and acquit himself well in virtue of his training

This doctrine, like the view of mind on which it is based, is very crude and has been subjected to much adverse criticism. It has been shown that the mental training that results from work at a given subject is largely specific and that any transfer of training from one subject to another takes place through three channels: through common subject-matter, through ideals of method and through ideals of behaviour. To take a simple instance, it is not uncommon for a man who has taken a first class in the Oxford final classical school to take a first class in history after a year's reading. Clearly transfer has taken place through these three channels. (1) A portion of the subject-matter is the same, (2) the methodical habit of reading and digesting books rapidly applies all along the line, (3) the habit of self-control acquired by hard study comes by its own when applied to any subject.

It is of course true that the classics might be taught in such a way as to make its subject-matter very extensive, and that thus the transfer to other subjects through this channel only would be considerable. This, however, is not the place for a defence of the classics, and it has not been difficult for the critics of formal training to show that the transfer from the classics, treated as a narrow linguistic study, to other subjects has been small, and that it is therefore desirable to introduce into the curriculum a number of modern subjects, if the results of school training are to be transferred to the work of life. This criticism is almost wholly destructive and might result in the substitution of a number of relatively easy modern subjects for the

harder and traditional subjects of school study. For the critics of formal training have sometimes forgotten that the subjects supposed to give this training were hard and exacting and demanded for their mastery an elaborate technique which had to be formed by years of patient effort.

To avoid the danger indicated another position must be found, and the opening is thus given to substitute for the doctrine of formal training a doctrine of *formative values*. By this is meant that no subject is worthy of inclusion in the curriculum unless it can be taught in such a systematic and scientific manner that the learner while mastering it shall acquire an elaborate technique, and that a main duty of modern education is so to organize the essential modern subjects, such as history, geography and literature, that instead of being soft options they shall embody an element of rigidity and lead to the acquisition of methods of attack.

One important aim in education will thus be the learning of a group of techniques built up by hard work and self-control, and this position may act as a defence against a dangerous doctrine which is abroad, that of self-expression. We are told that children should be allowed to express all their natural tendencies, that instincts should never be repressed, that freedom to do as inclination dictates is the cure for all the evils of education and will produce sturdy and serviceable citizens. It is not here suggested that instinctive tendencies should not be expressed, but it is well to insist that such expression is only a transitory aim and that the ultimate end of education is widely different. This position may be clearer if the term "self-expression" is reserved for the expression of primitive

instincts through relatively simple channels, while the term "self-realization" is used for the expression of the same tendencies through the techniques of the sciences and the fine arts, techniques which can be built up only through self-control, self-denial, unflinching effort and much pain. A due regard for formative values in the organization and teaching of school studies will insure the production of the techniques on which self-realization depends.

But here after starting from a psychological position we have arrived at something quite different, a vital aim in education. Thus even from the few instances taken it appears that psychology not only inspires and regulates all thought about educational means and methods, discourages sentimentality and deprecates short cuts and soft options, but that it also leads on to the establishment of aims and gives weight to truths whose final justification is the task of philosophy.

VII

PSYCHOLOGY AND MEDICINE

By WILLIAM BROWN, M D , D Sc , M R C P.

PSYCHOLOGY shows its most direct bearing on the science and art of Medicine in the domain of nervous and mental diseases, and here at the very outset it is called upon to meet such criticism as Dr J S Haldane has already brought forward by implication in his lecture on " Psychology and Biology," namely, that the real causes of illness in nervous disorders are physiological, and that these causes, when discovered, will give us an adequately satisfying theory of so-called functional nervous disorder. As far as I can make out, his view of psychology was this—that whereas all other sciences, even physics and chemistry, are abstract, psychology deals with actual experience—individual experience, and to that extent not only all formal investigators of mental processes, but also all good teachers and preachers are psychologists. This view, however, really reduces us to philosophy rather than psychology, and no room is left for psychology as between the opposing claims of physiology and the other physical sciences on the one side, and philosophy on the other. Where I would specially deviate from his presentation of the situation, is in his remarks upon the nature of the psycho-neuroses, or so-called functional nervous disorders, because it is in dealing with functional

nervous disorders that modern psychology claims, and I think rightly claims, to have made its greatest practical advances Dr Haldane seemed to imply that these functional nervous disorders only appear of a different nature from the ordinarily recognized organic nervous disorders because a wrong, inadequate and too mechanical view of physiology, especially that of the nervous system, is held, and that we should make our physiological explanations more general, in terms of the entire organism, passing beyond the abstractions of the ordinary physiology of the reflex arc. One gladly admits all that, and welcomes not only Dr Haldane's own work in this direction, but also the work of those, like Prof Sir Charles Sherrington, Sir Frederick Mott and Dr Henry Head, who have laboured especially on the physiology of the nervous system in recent years. Dr. Head, for example, in his recent exposition of his doctrine of Vigilance,* has shown clearly how the functioning of the nervous system as a physical system can alter in many ways independently of any gross lesions, or structural alterations, in special parts of that nervous system. Such a view, however, does not eliminate psychology, rather does it make psychology, if anything, more valuable in the full elucidation of nervous activity, because, although these discoveries are made without observing the consciousness (if any) of the individual (the experiments being carried out on animals), the interpretations of the experiments admit of amplification with reference to analogous situations in conscious human nerve function.

No doubt, corresponding to every moment of conscious

* Henry Head, "The Conception of Nervous and Mental Energy," *Brit Journ of Psychology*, Vol. XIV, pp 126-147, October, 1923

experience, there is some change going on somewhere or other in the nervous system. Without that consciousness, however, we cannot get so adequate an understanding of these physiological processes as we can by making full use of the observation of that consciousness. What psychology does in these cases is to get at the working of the nervous system from a new vantage point. Whereas the physiologist is investigating it from the physical side, observing physiological changes, the psychologist is investigating the same processes, or some of them, from the psychological side, and only with adequate psychological analysis can the physiological processes be fully explained. Moreover, as regards the *treatment* of functional nervous disorder, physical and physiological methods of treatment have shown themselves thoroughly inadequate to cope with the situation. Not that psychological methods of treatment invariably succeed, but one can say with absolute confidence, based upon the wide experience of a large number of enthusiastic workers, that the success in psychological treatment of functional nervous disorders transcends enormously the success arrived at by physical means alone, such as massage, electricity, baths, diet, drugs and the various degrees of rest cure. What is of still greater scientific importance, psychological investigation in these cases of functional nervous disorder gives us an insight into their meaning which is a thousand times more satisfying than the very latest and completest knowledge that the leading neurologists and physiologists of the nervous system can give. We are not claiming that these psychological processes which we discover by analysis in cases of functional nervous disorder occur

independently of physiological processes. What we claim is that our knowledge of these psychological processes is very much more complete than the knowledge of the corresponding neurological processes, and that, in all probability, even 50 or 100 years hence, physiology will not have succeeded in giving us a complete physiological account of the physical correlatives of these psychological processes. Further, even if and when physiology does give a complete account of the physiological processes underlying these psychological processes, the explanation in psychological terms will be found to be the more completely satisfying of the two, because psychological explanation carries with it elements of *meaning* that can never be adequately explained in merely physiological terms. That merely means that psychological categories of explanations are more concrete than physiological categories. Although all the sciences deal with abstractions from actual experience, the abstractions that psychology makes use of are nearer to immediate experience, are less falsified by theory, than the abstractions of biological science or physical science.

Psychology can then at least help medicine by giving a detailed account of the psychological processes that accompany certain pathological changes in the organism. In its most scientific part, namely, in experimental psychology we have instances of the great help that it gives to medicine in the study of abnormalities of sensation and perception, disturbances of recognition and disturbances of memory. Measurements of memory immediate and remote, and of mental and physical efficiency and fatigue, can be accurately carried out only by the use of modern psychological technique.*

* For this technique see C. S. Myers, "Textbook of Experimental Psychology," Cambridge University Press, 1911.

Further, in the general use of mental tests for classifying forms of mental backwardness and deficiency the work has all been done by psychologists, aided by the technique that they themselves have devised, namely, by methods that can eventually be traced back to the classical psycho-physical methods developed by Fechner, Delboeuf, G E Muller and more modern psychologists

Methods of exact psychological research have already been employed in the investigation of such functional nerve diseases as neurasthenia, hysteria, psychasthenia and forms of insanity like dementia præcox. There is a well-known association test, first suggested by Sir Francis Galton and developed by C G Jung, in which words are called out to the patient, who is instructed to reply by the very first word that comes to his mind. The investigator measures the time taken by the first word to call up the second by means of a stop watch. The associated word or response given by the patient is recorded. The experimenter notes the association time, and works through the list of words in that way, and finds variations in the association times and differences in the quality of the associated words which throw a flood of light upon the nature of the mental processes going on in the patient independently of his main personal consciousness. In one of the examples that I have myself investigated in that way, it was found that the word "death" called up after an interval of twenty seconds the response "geranium," without awareness on the patient's part of the connection between the two words.* Further investigation of that peculiar result brought out a history of much mental and emotional disturbance in

* "Suggestion and Mental Analysis," University of London Press, Ltd., 3rd edition, 1923, p. 48.

the patient's past life, a typical emotional triangle involving death and attempted suicide. This word association test of Jung can be supplemented by the measurement of what is called the psycho-galvanic reaction. If the patient is linked up by wires to a Wheatstone Bridge arrangement with a small battery in the circuit, with a galvanometer fixed up between the two pairs of arms of the bridge—that is, if the patient's resistance is balanced against the resistance of another arm of the Wheatstone Bridge so that the needle of the galvanometer registers zero—if now an emotion is aroused in the individual the galvanometer needle swings, showing that diminution of resistance in the patient has occurred. This diminution in resistance is most probably due to the occurrence of secretory processes in the sweat glands of the subject's skin. The swing of the galvanometer varies with the intensity of the emotion. But the galvanometer will also swing when the subject is not actually conscious of emotional change, although further analytic investigation may show that something analogous to that change has occurred in his sub-consciousness that might be expected to arouse associational processes of a similar trend. Although the actual interpretation of the psycho-galvanic reaction still gives considerable difficulty, the apparatus does admit of fairly accurate records of measurement, and in nerve patients it helps to supplement results obtained by the word association test *

But the most useful psychological line of investigation

* For a detailed discussion of the psycho-galvanic reaction, see W. Whately Smith, "The Measurement of Emotion," Kegan Paul, 1923.

and treatment in medical psychology is the general method of analysis independently of these aids from experimental psychology. It is found that such disorders as hysteria and psychasthenia have much deeper psychological significance than appears from their immediate symptoms. The subject may apparently suffer simply from loss of psycho-physical powers—loss of memory, loss of the power of speaking, of walking, of overcoming tremors or contractures, but psychological analysis of these cases shows that very complex, in some cases extremely complex, mental processes have occurred to produce the symptoms. These processes have occurred on the margin of consciousness—it is even claimed in complete unconsciousness—so that the patient is unable to recognize that he ever had such experiences. But under analysis they come up into consciousness, and come up in such a form that they give meaning to the symptoms. What is more, the bringing of them up into consciousness gets rid of the symptoms

To take one of the simplest examples of such hysteria cured by analysis. A war patient, an officer, suffered from contracture of the right arm after he had been blown up in the trenches: he also suffered from loss of memory for all the incidents of the shock. The re-arousal of these memories, under light hypnosis brought out the story that he had a close friend with him at the time, who had been smashed up by the shell, while he himself had been blown across his friend's body, falling upon his right arm. He had regained consciousness sufficiently to see what had happened to his friend, had immediately lost consciousness again, and was picked up in this state with a

contracture of the arm. The contracture persisted from that moment until the moment that he came under treatment several months later. The detailed revival of the emotional experience brought about a relaxation of the arm, and cure of the patient, although a previous employment of physical means and ordinary persuasion had quite failed to produce any lasting benefit. The explanation that came out in the course of subsequent talks with the patient was that he was so horrified at the sight of his friend's mangled body that he wished to forget it. He felt he could not face these memories, and so the memory traces remained there dissociated from his other memory traces, and inaccessible to his conscious mind. So long as they were thus dissociated, so long did the contracture of the arm persist. But, more than that, the contracture represented *symbolically* the individual's wish or desire not to remember. As soon as these painful memories had been forced into the patient's consciousness, this defence mechanism became no longer effective or necessary, and it disappeared. I should, however, add that some analysts would give a still more detailed explanation of a case like this. Some would attribute such shell-shock symptoms as this to reaction on the patient's part to a death wish. As far as I can make out, they would say in a case like this that the patient in some extraordinary way had wished for the death of the other man, and had reacted to it with intense grief, and at the same time with this amnesia and contracture. They would put the argument in the following form: When two people are together under intense shell fire and in great danger, the thought may pass through the one man's mind, who wishes to escape

at all costs, "If any one is to be killed, let it be the other man rather than myself." To my mind, there is not sufficient evidence for such an explanation. Yet some analysts will go so far as to explain grief that seems to be perfectly natural grief as a reaction to death wishes of the past. When an individual loses someone very dear to him, and feels intense grief afterwards, the grief may be a reaction to unconscious wishes of earlier years for that other person's death. Now that, of course, may seem at first sight to be an extraordinarily absurd theory, but it may well be that, in extreme cases of pathological grief, some mechanism of this sort is at work. That is, although there is such a mental state as normal grief which is perfectly normal and natural and carries with it its own explanation, there may be forms of grief that are pathological, that do not carry that explanation, where there is no adequate explanation on the fully conscious plane. It is quite true that on the loss of a beloved person thoughts may come up of how one had not always treated him as one should in the past, and one becomes abnormally conscious of one's shortcomings. Here a similar psychological mechanism may be at work.

I can now pass most naturally to forms of mental illness that seem to be psychologically explicable in these terms. In so-called compulsion neurosis or obsessional neurosis, where the patient is obsessed by a tendency to carry out a certain ritual and obsessed by absurd fears or by certain feelings of taboo, mental analysis sometimes shows that these symptoms must have arisen as a reaction to mental tendencies of a quite

different nature in very early years. For example, over-conscientiousness, or pathologically irrational and excessive anxiety about the welfare of others, may sometimes be shown in the course of analysis to be a reaction to an exceptionally strong tendency towards cruelty in very early years. Freud would explain such a case as a reaction to what he calls sadism, or the tendency to be cruel to those we love. But Freud would go further. He says, quite parenthetically at the end of one of his articles,* that, in the same way, sympathy is a reaction to sadism. He would explain normal sympathy as a reaction to an impulse to hurt in earlier years, just as some analysts would explain grief as a reaction to death wishes in the unconscious, dating from earlier years. Such mechanisms, no doubt, may explain pathologically intensified grief and sympathy, but grief and sympathy are normal reactions of the mind and should be themselves taken as explanatory concepts. It is in cases like this that the unsatisfactory nature of much psycho-analytical work shows itself. I mean the tendency to take results attained by investigation of pathological cases, and to use a theory based upon those results as the ground of explanation of normal mental processes. One may see a further example of this in arguments based on the facts of "projection." Certain patients show in very pronounced form this phenomenon of projection. They may, *e g*, imagine they are being persecuted by others who are jealous of them and are hindering them in their legitimate efforts to make a career for themselves. Analysis shows that these feelings and delusions are

* "Triebe und Tribschicksale," *Sammlung kleiner Schriften zur Neurosenlehre* Vierte Folge, 1918, S 265

really to be explained as a defence reaction to the same feelings that the individual himself has had towards other people often in much earlier years, although feelings in later life may contribute their quota. In some quarters * this pathological concept has been used to explain ideals that are generally recognised as perfectly normal activities of the mind. The most general instance is the conception of a God. It has been suggested that we form the conception of a God, project him outwards, as it were, because we have need of certain things, we have certain desires, in general the desire for a feeling of security which we cannot attain by reference to our ordinary experience of life. Not meeting with direct palpable satisfaction of such desire, and finding the lack of certainty intolerable, we project an imaginary fulfilment of the desire into the outer objective world in the form of a belief in God. In addition to this factor of projection, another pathological factor co-operates in creating the religious sentiment, the factor of regression. The individual feels desperate, feels that the limit of his resources has been reached, and is conscious of his own weakness and insecurity, and in the face of the great mysteries of life and death he retires baffled, regresses to the earlier type of mental activity of childhood. The feelings he had towards mother and father, as those who gave him security at that time, are again projected outwards, and contribute to his conception of God. Both projection and regression are factors that can be verified as occurring in pathological cases, but analysis of these cases, so far as it is successful, removes both the projec-

* Cf J Kinkel, "Zur Frage der psychologischen Grundlagen und des Ursprungs der Religion," *Imago*, Bd VIII, 1922

tion and the regression and the patient becomes more normal, with less regression and less projection. On the other hand, the religious feelings which the individual has are not diminished in their essence by the analysis, rather are they increased, although superstition and spurious religiosity do tend to disappear.

The general explanation of the psycho-neuroses, then, is in terms of mental conflict and repression, the repressed tendencies dating mainly from early years. In other forms of nerve trouble, such as intense depression, the conflict may be of more recent date, may be a conflict between the natural man and his ideals, his conscience. We find, for example, that in some forms of melancholia, where the patient seems to be continually upbraiding himself, depreciating himself, and complaining of himself rather than others, deeper analysis shows that the complaints and the hostility are directed against something or somebody else intimately related to his life. They are really directed towards somebody or something with which he has in a way identified himself in the past, and who or which has disappointed him. He may have had a close friend for whom his affections took the form of an unconscious identification. He found that he could, as it were, identify himself with the other individual, and his affection for this individual was of the so-called identification or narcissistic type, the type of self-love. If now that individual disappoints him so completely that his emotional energy can no longer go out towards him, the energy is withdrawn into himself, becomes turned inwards upon himself, not in the form of love, but in the form of hate. He seems to hate himself, but that hate is so persistent because it is really directed against

the image of the other individual who has disappointed him. Such a description, as I give it, seems a very metaphorical way of explaining the symptoms, and I admit that it is difficult to choose words adequate to the situation. But the central fact stands fast, that if one analyses cases of depression, one frequently finds not only that their hostility to themselves is really hostility to someone else, but also that when they realize the situation fully, the depression clears up. The therapeutic test is all-important in this domain. I do not mean that cure is overwhelming evidence of the truth of the theory. The situation is really this—that a negative result where benefit does not occur does not exclude the possibility of the truth of the theory; on the other hand, actual recovery is not conclusive evidence in favour of the theory upon which the treatment may have been based. But where recovery occurs in whole classes of patients in the degree to which certain mechanisms are revealed in analysis, we may justly conclude that these mechanisms are of great importance in the causation of symptoms. And if we can, on the basis of the analysis of some cases, predict what will be found to be the cause in other cases, this will be still more convincing evidence. That is what is happening almost every day. A case is brought to one suffering from fear of infection or over scrupulosity as regards dirt, etc., and one knows before one begins to analyse the patient that the result may show ultimately that the patient is suffering from revulsion of feeling in the first two or three years of life in regard to means of cleanliness, and to certain fundamental instinctive processes. The analysis is a long one; the result is that if one succeeds in getting to those

early memories the patient does improve and may recover.

It is sometimes objected that this general method of analysis is unconvincing because it allows so much scope to the imagination of the analyst and gives him much opportunity of unconsciously suggesting into the patient's mind his own ideas. That may occur in unskilled inexperienced analysts. But after some practice one finds that there is very little danger of this, because the whole process is so very detailed and extended over so long a time that the patient is in quite a different state, or should be, from that in which he is influenced by suggestion. At times when he gives his "free associations," he is in an uncritical state of mind. At other times, and this is the method I myself would advocate, at certain stages in the analysis he is encouraged to be as critical as he likes, and he is encouraged to argue the matter out, and gradually he is driven to realize the situation for himself, he is driven partly by the doctor and partly by himself and he gets into a state where he must obtain relief, and he can only obtain that relief by facing the facts more and more honestly to himself. This is especially the case with obsessional neurosis. Fortunately for the theory, unfortunately for the patient himself, these obsessions give him little peace, and in the course of analysis they may at first become much more intense and he is driven on and on by the gadfly of this impulse to discover the reason for it. You may try him with suggestion treatment, at first he benefits somewhat, but he finds that the benefit does not last. It is more and more clear to him that there is an underlying cause which he must find out

for himself, and that is what carries him through the analysis *

I have hitherto avoided mention of suggestion treatment, not because I think suggestion treatment is unimportant or ineffective in psychotherapy—it can often suffice to produce quick and permanent cure—but on the theoretical side the further question always remains: Why should this particular patient respond to this particular suggestion? Let us consider the simple elementary explanation of functional nerve disorder: the patient has become ill through bad auto-suggestion, and therefore he will get well if given good counter-suggestion. But the further question remains: Why did he succumb to this particular bad or pathogenic suggestion in the past? His mind was open to all sorts of suggestions, both good and bad, and the only way to answer this question is to analyse the situation. To take one of the simplest types of war neurosis, a soldier became functionally paralysed in his lower limbs because a shell burst near him, and he became paralysed by fear. He thought he was permanently paralysed (pathogenic auto-suggestion) and remained so till he was treated by therapeutic suggestion. Further analysis showed a strong desire to get away from the firing line, to get a wound which would enable him to leave the trench without dishonour, and that, together with the emotion of fear from which he suffered at the time, furnished a satisfying explanation

* A fundamentally important factor in all analysis is the factor of "transference." For a brief explanation of this and of modern views on psychotherapy, see my "Talks on Psychotherapy," University of London Press, Ltd., 1923, p. 96.

of his illness. That analysis confirmed his cure and made it permanent

It is no explanation to say that a patient got ill or well by suggestion. This is a statement of the problem, not its solution, and far from the general question of suggestion being a very simple one, which we can now leave aside as settled and pass on to something else, it still remains one of our most important problems in psychotherapy. In the immediate future, I can safely predict that we shall meet with many articles on suggestion in scientific journals, and the reason why suggestion is going to be so very important theoretically is that analysis has advanced far enough to be able to make its contribution to the explanation. Earlier forms of analysis emphasized repressed tendencies and native propensities that have been held in check in an irrational way, and thus become causes of illness. Modern analysis is moving rather on the lines of analysing also the repressing tendencies, considering what are the factors in the mind that produce the repression, what are the mental and neurological forces bringing about this partial or complete dissociation of the activity of one small part of the nervous system and mind from that of the whole system. If we face the problem from the point of view of repressed tendencies, we may find ourselves in the company of those who, for the most part, believe in rigid determinism, in mechanical determination of conduct. If we approach the same problems from the point of view of analysis of repressing tendencies, our view may be very different. We may hold to some form of self-determinism, but we shall feel that further explanation is needed of the nature of personality, and of the nature of individual

volition which may make it impossible for us to accept the current solutions of determinists like Freud and his school

In conclusion, I would point out that though the work of psychology is of most value to medicine in the treatment of psychogenic nervous disease and earlier stages of insanity, it is also of considerable value in the treatment of the recognized organic diseases, especially of the "functional overlap" of early organic nervous disease. The state of the patient's mind, his mental attitude towards life, is of the utmost importance to his cure, and we may confidently expect the doctor of the future, who will receive training in psychology as well as in other biological sciences in his student days, to achieve still greater success from its practice than he achieves at present by his intuitional and common-sense methods. On the other hand, physical methods of treatment of mental illness should not be neglected, and possible disturbance of functioning of the endocrine glands (thyroid, pituitary, suprarenal, etc.) should be looked for, and, where found, corrected. In a fully adequate therapy the illness should be treated from both sides, mental and physical.

VIII

PSYCHOLOGY AND PSYCHICAL RESEARCH

By T. W. MITCHELL, M.D.

THERE are some people whose minds work in such a fashion that when they are asked to answer a simple question, or to describe some recent event, they cannot do so without first telling all the associated thoughts aroused by the question, or recounting the historical antecedents of the event about which information is sought. They seem compelled, as has been said, to begin at Adam.

When you ask me to speak on the relations between Psychology and Psychical Research, I am tempted to follow their method and to begin by asking, What is Psychology and what is Psychical Research? For only when we agree in our use of these terms can we usefully discuss the relations between the two departments of knowledge which they denote. But these questions need not detain us very long, they need only be answered in a way which will suffice to ensure that when one of these terms is used we shall all understand it in the same sense.

By Psychology we mean the science of the mind, or in Dr. Brown's words, "the science of the mind which considers the mind as a sequence of mental processes in time", the positive science of the mind, which employs, as its methods, inference from the observed

facts of behaviour and from the observed facts of experience

By Psychical Research we mean the investigation of all natural phenomena that do not readily fit into the framework of any of the recognized sciences. In the words of the founders of the Society for Psychical Research, "there appears to be, amidst much illusion and deception, an important body of remarkable phenomena which are *primâ facie* inexplicable on any generally recognized hypothesis, and which, if incontestably established, would be of the highest possible value"*. Amongst the problems which, at its inception, the Society for Psychical Research set itself to investigate were telepathy, hypnotism, apparitions, haunted houses, and the various physical phenomena commonly called "spiritualistic"

All the phenomena investigated in Psychical Research are conveniently divided into two great groups, the psychical and the physical. This corresponds with Professor Richet's division of Metapsychics (the name he proposes for the science of supernormal occurrences) into subjective and objective metapsychics. Subjective metapsychics is concerned almost entirely with the problem of supernormal acquisition of knowledge (Cryptesthesia). Objective metapsychics deals with supernormal physical manifestations, such as "materializations" and unexplained movements of physical objects

In both of these groups it is observed that the occurrence of supernormal events usually depends upon the presence of some person or persons of a class commonly called "mediums". When the phenomena are "psy-

* *Proc S P. R.*, Vol. I, p 3.

chical " only, the medium is sometimes referred to as a " sensitive " or " automatist " These persons seem to have some peculiar endowment that renders possible the strange occurrences associated with their presence ; and since their minds appear to work in unusual ways, and to have unusual powers, this alone should be sufficient to attract psychologists to the study of Psychical Research. And, indeed, the psychologist will hardly find in any other circumstances such a wealth of material for investigation as is presented to him in the *séance* room of a medium.

Whether the mediumship be genuine or fraudulent matters little so far as psychological interest is in question. If it be genuine there is the whole range of supernormal manifestations to be studied and the nature of the mental state which makes them possible ; if it be fraudulent, there is an opportunity, not otherwise readily available, of learning something new about the psychology of deception and illusion. In short, the psychologist can investigate not only the psychology of the medium, but also that of the sitters—of the medium when psychical phenomena are observed, for here the relation between the psychological state of the medium and the supernormal occurrence is most apparent ; of the sitters, when physical phenomena are in question, for here the possibilities of fraud on the one hand and mal-observation on the other are greatest.

The chief qualification necessary in the investigator of the physical phenomena of spiritualism is ability to detect fraud and to avoid being made the victim of illusion. He must be proof against " suggestion "—so far as that is possible in any human being ; he must

be well acquainted with the devices of conjuring , and above all he must be capable of continuous observation without becoming fatigued or allowing his attention to flag

If a professional psychologist should himself undertake to investigate the apparently supernormal manifestations occurring at a mediumistic *séance*, there are certain conditions which he must be willing to observe. He may be entirely sceptical, but he must not show his scepticism , he may deprecate the absence of adequate illumination, but he must very often accept it , he may be scornful of all the " stage properties," the " cabinet," the " circle," the tambourines, or what not, but he must often acquiesce in what may appear to him to be puerile inanities. Whether these things are merely the result of mediumistic tradition, or the subterfuges of fraudulent mediums, or necessary conditions for the production of genuine phenomena, may not always be easy to determine , but it is quite likely that, if a medium is capable of producing any manifestations of truly supernormal powers, these may only reveal themselves when the conditions are such as satisfy the beliefs which the medium has come to entertain regarding their importance. It is mere presumption to declare that if the phenomena are not fraudulent they ought to be possible in bright light as well as in semi-darkness . we know far too little about such occurrences to be dogmatic on this or any other matter connected with them.

But although in a general way there must be acquiescence in the conditions imposed by the medium, and a sympathetic demeanour towards all ostensibly supernormal manifestations, at the same time there must be

an unflinching watchfulness, an unceasing alertness, and an adequate knowledge of the possible sources of error in investigations of this kind

The scoffers and critics of Psychical Research lay much stress on the frequency of fraud in mediumistic *séances*, and they comment with condescending pity on the simplicity and child-like faith of the many eminent men of science who have been fooled by the tricks of clever impostors. But these critics generally forget, or they do not know, that the possibilities and causes of mal-observation in Psychical Research, and the precautions necessary to avoid it, are far better known to students of this subject than to any other class of men. Just as any special form of scientific inquiry has its own technique and rules which serve as guides in observation and experiment, so, the nature of the conditions and of the material encountered in the investigation of mediumistic phenomena has led to knowledge of a very special kind, which may be of little interest or value to workers in other departments of science, but which is indispensable in the pursuit of Psychical Research.

Thus, for example, mal-observation, illusions of perception and of memory, and the general untrustworthiness of human testimony based upon recollection of the evidence of the senses, have been studied more intensively by students of Psychical Research than by professional psychologists. I would illustrate this statement by pointing to a remarkable experimental investigation, undertaken, in the early years of the Society for Psychical Research, by two of its members, Dr Richard Hodgson and Mr. S. J. Davy

Mr Davy was an amateur conjurer who at one time

had been inclined to believe that the "slate-writing" of a once-famous medium, named Eglinton, was a genuine spiritistic phenomenon. Later, however, Davy himself became an expert conjurer and was able to repeat Eglinton's performances so as to mystify many careful observers. He asked many of his sitters to write reports, as soon as possible after leaving him, describing, as accurately as they could, all that had happened during the sitting. These reports provided amazing evidence of the untrustworthiness of the senses, the extraordinary difficulty of continuous observation, the frequency of illusions of perception during the sitting, and of illusions and lapses of memory when writing the reports.

As an example of the kind of results obtained in "slate-writing mediumship," and of the causes of the mal-observation on which conviction of the supernormality of the result is based, I will quote a short statement by one of Mr. Davy's sitters, Mr. Arthur Podmore, a brother of Frank Podmore, the well-known writer on Psychical Research. The latter was informed beforehand by Mr. Davy of the details of the particular methods which he intended to employ on that occasion. The statement, dated July, 1886, is as follows. *

"A few weeks ago Mr. D. gave me a *séance*, and to the best of my recollection the following was the result. Mr. D. gave me an ordinary school slate, which I held at one end, he at the other, with our left hands. He then produced a double slate, hinged and locked. Without removing my left hand I unlocked the slate, and at Mr. Davy's direction, placed three small pieces

* *Proc. S. P. R.*, Vol. IV, p. 416

of chalk—red, green, and grey—inside : I then relocked the slate, placed the key in my pocket, and the slate on the table in such a position that I could easily watch both the slate in my left hand, and the other on the table. After some few minutes, during which, to the best of my belief, I was actively regarding *both* slates, Mr. D. whisked the first away, and showed me on the reverse a message written to myself. Almost immediately afterwards he asked me to unlock the second slate, and on doing so I found to my intense astonishment, another message written on both the insides of the slate—this time in alternate colours, and the chalks apparently much worn by usage.

“My brother tells me that there was an interval of some two or three minutes during which my attention was called away, but I can only believe it on his word.”

I have chosen “slate-writing” as an example of fraudulent phenomena, for of all forms of mediumship it is to-day perhaps the most thoroughly discredited, and because its disrepute is largely due to *Psychical Research*.

It is very commonly assumed that *Psychical Research* and *Spiritualism* are synonymous, or, that to show interest in *Psychical Research*, if it does not indicate a belief in “spirits,” at least reveals a bias towards such a belief and a craving for empirical evidence that would justify it. But it should be clearly understood that to be engaged in *Psychical Research* does not carry any implication of belief except, perhaps, a belief that the universe is intelligible and that the methods of science are our most trustworthy means of trying to understand it. If it be true that the

psychical researcher has any bias towards spiritualism, it is often a bias towards spiritualism in the philosophical sense rather than in that of popular speech

But it is not to be gainsaid that the pursuit of Psychical Research does sometimes lead to an acceptance of the spirit-hypothesis as affording the most satisfying explanation of some of the observed phenomena, and it is a curious psychological fact that the adoption of this hypothesis by any man eminent in the world of science, is regarded by almost every one, outside the ranks of the Spiritualists, as evidence of mental weakness or child-like credulity. Sometimes, no doubt, conviction has been too readily acquired, and psychologists have an interesting problem presented to them when they try to account for the uncritical acceptance of belief, in this sphere, by men whose critical powers in their own special departments of science are unsurpassed

But if the psychology of believers is of interest, that of their traducers is no less so. Nothing is more remarkable than the puerility of the criticisms of Psychical Research and spiritualism which have come from men as eminent in their own branches of science as are some of those whom, implicitly or explicitly, they scoff at and patronise. Thus we find a distinguished physiologist seriously maintaining that if the great physicists who have allied themselves with the spiritualists had been trained in a physiological instead of in a physical laboratory, and had acquired a sound knowledge of the structure and development of the nervous system, they *would have known beforehand* that no supernormal phenomena could possibly occur!

Psychologists, also, are sometimes apt to believe that

in their own science, especially in the admitted similarity or identity of many traits common to mediums and to persons suffering from psycho-neurotic illness, they have found the true explanation of all the problems of Psychical Research. Once a medium has been labelled "an hysteric," that is to say, one in whom dissociation of consciousness may occur and unconscious fraud thus become possible, everything else, it is said, can be accounted for by the simple-minded credulity of those who dabble in Psychical Research.

Now all this is due to ignorance—ignorance of the nature of the problems to be solved and ignorance of the ways of solving them, but it is also the outcome of a bias towards unbelief, and this bias, just like the bias of the believer, has its foundation in the "deep" psychology of the individual who displays it.

Although the psychological state of the medium is, as I shall endeavour to show, one of great interest and importance, it cannot be too strongly emphasised that it has no direct bearing on the essential problems of Psychical Research—namely, the supernormal acquisition of knowledge and the alleged supernormal movements of physical objects. As I have said elsewhere * "It does not matter in the least what the term hysteria may connote. The supernormality of an automatic script has to be determined by other considerations than the psychological state of the automatist. If it can be shown that any hysteric really has the gift of clairvoyance or any other supernormal power, it will be just as good evidence as if he were a normal person. If physical objects do move without contact in the presence of any one who is said to be hysterical, it is just

* 'Medical Psychology and Psychical Research,' p 138

as wonderful as if they so move in the presence of someone who is not "

When we pass from considering the psychology of the sitters—both investigators and believers—and their critics, to a discussion of the psychology of mediums, we enter a field of investigation which has yielded important contributions to our knowledge of the structure and process of the human mind. This field is that department of psychology which is commonly called Abnormal Psychology or Psychology of the Abnormal

As is well known, a medium, during the manifestations peculiar to his mediumship, is usually in a state of trance, and it may be said that our knowledge of the psychology of mediums, and indeed of all forms of mental dissociation, had its beginnings in investigations on the nature of trance states. The occurrence of trance has been known from the earliest times of which we have record, but the investigation of its nature by the methods of science does not seem to go farther back than the days of Mesmer and his followers. In 1784 one of Mesmer's pupils, the Marquis de Puységur, discovered a state known for many years as "Magnetic Somnambulism," which was, without doubt, identical with what we now call hypnotic somnambulism—an induced somnambulism, similar in many respects to the spontaneous somnambulisms of hysteria. The essential feature of somnambulism is that although a person in this state is obviously conscious, there is, when normal consciousness returns, a complete loss of recollection of all the experiences of the somnambulist phase. This splitting or breaking of the stream of consciousness in passing into and out of somnambulism

or trance is the prototype of all that we now class under the term "mental dissociation"

In the study of abnormal mental states every variety and degree of dissociation may be recognized, but the form in which the symptoms of dissociation were first carefully observed—the form met with in the "magnetic" trance—is that which is, perhaps, of most importance in the investigation of the psychology of mediums. Hardly of secondary importance, however, is the form and degree of dissociation found in those states known as double or multiple personality. Many of the older writers had observed the spontaneous occurrence of change of personality, or "double consciousness," as it was at one time called, but no understanding of this condition was possible until some insight into the nature of somnambulism had been gained. Within recent years, however, we have acquired a good deal of knowledge of what happens in the mind when these strange divisions of the self occur. Thus we have hypnotic experiment and the observation of multiple personality as our chief guide-posts when we try to penetrate to the psychological background of mediumistic phenomena.

But although we take fully developed somnambulism as our prototype of dissociation, and mediumistic trance as the form of dissociation in which supernormal phenomena are most strikingly manifested, we must not forget that there are many degrees of dissociation and many varieties of mediumship. If we use the term medium, in a general sense, to indicate any one who provides evidence of having knowledge which has been acquired in some supernormal way, or in whose presence supernormal physical events take place, we may

perhaps be led to think that there is no necessary connection between mediumship and dissociation. For the more specific term "sensitive" or "automatist" may be applied to persons who give evidence of possessing supernormally acquired knowledge, and who yet give us no very obvious grounds for supposing that their minds are more dissociated than those of ordinary people. Also, some supernormal physical manifestations are not dependent upon, or associated with, states of trance, and, moreover, supernormal physical phenomena are not easily brought into relation with any peculiarities in the mental state of the medium. Indeed, so true is this, that in discussing the psychology of mediums as it bears on their supernormal powers, we are, for the present, almost compelled to confine our attention to those mediums whose phenomena are mainly of a psychical nature. Nevertheless, if we survey the whole field of Psychical Research, we shall find much evidence in support of the view that supernormal phenomena are related in some way to states of mental dissociation in the persons through whom, or in whose presence, such phenomena occur.

With the exception, perhaps, of speech or writing during trance, automatic writing, in a more or less normal state, is the most common way in which the possession of supernormally acquired knowledge is revealed. The hand of the automatist writes as if it were directed by a secondary personality, while the subject is awake yet unaware of what is being written. And just as a medium in trance may talk for an hour without giving any indication of supernormal powers, so, most automatic writing shows nothing more than the subconscious phantasies of the writer, but every

now and again, the automatist, just like the medium, may give some demonstration of supernormally acquired knowledge.

So far, however, as the mere mechanism of automatic writing is in question, there is nothing supernatural about it at all ; just as there is nothing supernatural in falling into trance. It is an outcome of mental dissociation and can be readily brought about in any good hypnotic subject. All that is necessary is to tell him, during hypnosis, that when he wakes up his hand will write something while he himself is occupied with something else. The mechanism of the "motor automatism" here shown can be readily understood. The hypnotic personality, or stratum of consciousness, carries out the suggestion, and so-called automatic writing is produced. Of course it is not automatism in the physiological sense, but the willed movements of a sort of secondary personality that has been artificially brought into being.

In the same way the so-called "sensory automatism" observed in crystal gazing can be experimentally induced by hypnotic suggestion. And just as an automatic writer may produce nothing but subconscious phantasies, so the crystal gazer may see nothing in the crystal except visions that are but the projections of subconscious images which have had no supernormal source. Nevertheless, if the gazer be a "sensitive," what is seen in the crystal may sometimes reveal facts that could not have become known through the ordinary channels of sense.

Thus we see that although many of the mechanisms of mediumistic manifestations are identical with those met with in persons who show no evidence of super-

normal gifts, there would seem to be, in the class of mediums, some novel faculty, more or less fitfully displayed, which transcends the limitations of the sense organs and the normal powers of the mind.

In mediumistic trance the normal personality of the medium gives place to what has every appearance of being a secondary personality similar to those met with in extreme forms of psycho-neurotic dissociation; or to those assumed, in response to suggestion, by hypnotized persons. But the secondary personality appearing in mediumistic trance generally claims to be a "spirit" who "controls" the medium during the trance and acts as a "guide" in all matters pertaining to the development and manifestations of the medium's powers. In spiritistic circles this claim is generally accepted as affording the most satisfactory explanation of the nature of controls and of the supernormal powers which they sometimes display.

The hypothesis of "spirit control" carries the implication that during trance the medium's spirit withdraws or is withdrawn from the medium's body, into which, thereupon, an extraneous spirit enters and takes possession of the whole or part of the bodily organism. The "control" plays the part of an intermediary in the communications with the dead which are alleged to take place in the trance of some mediums. The "sitter" is in direct communication with the "control", the control is in direct communication with both the sitter and the discarnate spirit; the discarnate spirit—known in the terminology of psychical research as "the communicator"—communicates with the sitter through the intermediary of the control.

A medium may have more than one regular control,

each of which claims to be an independent spirit. As a rule we have no means of judging whether such a claim has any foundation or not. There is, however, one form of control occasionally met with which is of special psychological interest. This is what is known as "direct" or "personal" control, in which the communicator appears to take possession of the medium's bodily organism and communicates directly with the sitter, instead of making use of the ordinary control as an intermediary. In these circumstances a startling reproduction of mannerisms of speech and gesture characteristic of dead friends has been witnessed by a number of competent observers.

The psychologist in approaching the problems of mediumship may at first leave out of consideration the question of the supernormality of any phenomena manifested in the trance, and he may legitimately concentrate his attention on the points of resemblance to be found between mediumistic and other forms of trance, and between controls and the secondary personalities described by psychopathologists. If he does so, he will, in my opinion, find no evidence that the controls of mediums differ in any important way from the personalities assumed by hypnotic somnambules in response to suggestion, or from those that appear spontaneously in certain forms of mental dissociation. We may consider separately these two kinds of alteration of personality, although the essential element in their formation may ultimately prove to be the same in both.

One of the most remarkable features of deep hypnosis is the unexpected aptitude for dramatic impersonation shown by the hypnotized person. The literature of

hypnotism is strewn with descriptions of the astonishing representations of well-known people given by hypnotized subjects in response to suggestion. And just as these impersonations are produced by suggestion from without, and are rendered possible by some release of power, or freedom from inhibition, peculiar to the hypnotic state, so, the character of a control may be merely a result of self-suggestion by the medium, taking effect in a self-induced hypnosis. If it is suggested to a hypnotized person that he is Napoleon Buonaparte he will accept the suggestion and will act the part, for the time being he appears to identify himself with Napoleon. So, if a medium goes into trance holding the conviction that he is controlled by the prophet Isaiah, the trance personality will assume the title and play the part as well as he can. Some process of this kind would form the simplest explanation of the character of many of the ordinary controls of mediumistic trance, and it seems to me the most probable explanation of the imitation of the idiosyncrasies of dead friends seen in cases of "direct control." But here a supernormal factor appears when, as most frequently happens, the medium has never seen or had any knowledge of the communicator now claiming to control. By some writers it is thought that the knowledge necessary for such impersonation may be acquired telepathically.

The character displayed by a control is part of the general problem of multiple personality. Striking resemblances can be traced between secondary personalities like "Sally" of the Beauchamp case, or "Margaret" of the Doris Fischer case, and mediumistic controls such as the "Feda" control of Mrs

Leonard or the child-like controls of less well-known mediums. If this be so, the question, What is the nature of mediumistic controls ? becomes merged in the larger question, What is the nature of secondary personalities ?

It is commonly accepted by psychopathologists that secondary personalities of all kinds are derived from fragments of the normal personality—fragments in the sense of organized systems of thought and of emotional traits and tendencies, split off from associative connections with the rest of the self ; split off, it may be, because of some feebleness in the synthetic capacity of the self, or, it may be, because they suffer repression owing to their incompatibility with the aims and ideals of the self adopted by the " normal personality " But if controls are comparable to the personalities assumed by hypnotised subjects in response to suggestion and if they are indistinguishable in all important respects from ordinary secondary personalities, then it is permissible to suppose that both of these forms of alterations of the self may have a similar origin and that their prototype is found in the dramatic impersonations of deep hypnosis

At present not much evidence can be brought forward in support of this view, for it has not, hitherto, so far as I know, been explicitly entertained by any one as affording an explanation of all varieties of secondary personality Mrs Henry Sidgwick has upheld it as the most satisfactory hypothesis of the nature of the various controls of the famous medium, Mrs Piper * A somewhat similar hypothesis of the nature of ordinary

* Mrs Henry Sidgwick, " The Psychology of Mrs Piper's Trance Phenomena," *Proc S P R*, Part LXXI

secondary personalities is implicit in the conclusions of Freud and Jung on some of the consequences of the mental process known, in psycho-analytical and allied doctrines, as *identification*

"Identification," Freud says, "endeavours to mould a person's own Ego after the fashion of the one that has been taken as a 'model' "* Jung says "Identification is an estrangement of the subject from himself in favour of an object in which the subject is, to a certain extent, disguised For example, identification with the father practically signifies an adoption of the ways of the father, as though the son was the same as the father and not a separate individual *Identification* is distinguished from *imitation* by the fact that identification is an unconscious imitation, whereas imitation is a conscious copying " †

Jung thinks that just as imitation is an indispensable expedient for the developing personality of youth, so, identification may be progressive in so far as "the individual way" is not yet available "But whenever a better individual possibility presents itself, identification manifests its pathological character. . . For now it has a dissociating influence, dividing the subject into two mutually estranged personalities." ‡

More explicitly, as touching our topic, Freud says, in one of his most recent writings: "If these identifications gain ground and become too numerous, too strong and mutually incompatible, we may expect a pathological result. It may end in a disintegration of the Ego, the separate identifications shutting themselves

* S Freud, "Group Psychology and the Analysis of the Ego," p 63

† C Jung, "Psychological Types," p 551

‡ *Ibid.*, p 551.

off on account of their resistance against one another. Possibly the secret of so-called Multiple Personality is that the separate identifications usurp consciousness one after another " *

Now the essential feature of dramatic impersonation by a hypnotized subject seems to be his temporary identification with the suggested personality, in so far as this is known or imagined by him. We do not need to suppose that the process of identification in the hypnotized person has the same mechanism as in the conditions described by Freud and Jung. We may regard it as merely one more instance of a product of suggestion simulating a spontaneous activity. The self-suggested personalities of controls would occupy a place midway between the dramatic impersonations of hypnosis and secondary personalities, arising spontaneously, which may be independent of suggestion either from without or from within.

Freud says that the most usual object of identification is a love-object that has been lost or renounced. How far this may prove to be true of the identifications of secondary personalities, here postulated, future observers will have an opportunity of discovering. For the present little can be said about it. But it seems to me that if Freud's contention is just, it may point to a possible source of the alleged verisimilitude in the impersonations of the dead by "direct controls." Any explanation of this rare feature of mediumistic trance must assume telepathy or cryptesthesia of some kind and it is an economy of hypotheses to suppose that the mind of the sitter is the most readily available source of the knowledge acquired supernormally by mediums.

* S. Freud, "Das Ich und das Es," p. 35

This is, indeed, largely borne out by observation. It has, further, seemed evident that the subliminal region of the mind of the sitter is more readily "tapped" by the medium than is the supraliminal consciousness. If, then, we suppose that the sitter has unconsciously identified himself with the dead friend who is purporting to communicate, the supernormal powers of the medium may lead to a telepathic transmission or transfusion of "the identification" from the subliminal of the sitter, of so vivid a nature as to render possible the striking phenomena of direct or personal control.

As has been said, the explanation of multiple personalities usually given is that they are formed by split-off portions of the normal personality. We must remember, however, that two apparently distinct types of multiple personality have been described and it is found that interpretations which seem adequate for one type are not so for the other. The most easily understood form of divided self is that in which one phase of consciousness alternates with another, each showing the characteristics of personality, each having its own memories and sentiments and desires, and each ignorant of the other, of its thoughts, of its feelings, and of its actions. If we call the one phase A. and the other B., then we may say that, in this type, A. does not know B. and B. does not know A. They alternately take possession of the bodily organism, and when A. comes it does not remember what B. has been doing, or thinking, or feeling, when B. comes it is equally ignorant of A. Sometimes, in these cases, a third personality can be brought into being—the normal personality, restored by a synthesis of the two alternating phases.

Such alternating phases of the empirical self are not

very hard to understand, but there is another form of multiple personality the interpretation of which is more difficult. It may be called the co-conscious type, from the fact that when A. is the personality in possession of the body, B is subliminally conscious and aware of all A.'s thoughts and actions. The evidence for the existence of this form of multiple personality is good, though not very abundant; but it is not hard to accept, for it conforms to much that we know about hypnotism and hysteria. It is in this group, I think, that we must include the controls of mediumistic trance.

It cannot be denied that the solution of the problem of co-consciousness is not easy. A very common way of dealing with it is to dispute the facts, or the interpretation of the facts, on which this conception is based. The facts, however, are beyond dispute, all that can justifiably be questioned is either the "consciousness" or the "concomitance" asserted of them. The concomitance can readily be demonstrated to any one who doubts it, so that the only question left open is that of the "consciousness" which appears to characterize all so-called co-conscious activities.

Dr Morton Prince, to whom we owe the term "co-consciousness," has endeavoured to draw a distinction between "awareness" or "self-awareness," and the mere quality of consciousness. By "self-awareness" I understand him to mean awareness *by* a self; and he holds that "consciousness is not synonymous, co-extensive, or identical with self-awareness." He says, in the summary of a paper which he read at the International Congress of Psychology at Oxford in July, 1923: "Any of the diversified types of conscious processes, ranging from vague anoetic sensibility or

sentence to highly specialised sensations, feelings, etc., and integrated in an ascending scale of complexity into perceptions, images, thoughts, self-consciousness and systems of such may become segregated from the main dominant consciousness and function co-consciously—that is to say, to use the conventional terminology, without the self or 'I' or anything being aware of the co-conscious process, and without the co-conscious process having any self or self-awareness, or anything, such as an 'experiencer' that is aware "

Dr Prince's proposal to use the term "consciousness" as indicating something different from experience is one more instance of the justness of Dr Ward's declaration that the manifold ambiguities of the term "consciousness" in psychology is something of a scandal.* The possibility of entertaining such a notion as Dr. Prince puts forward might be understood if we adopted the epiphenomenalist belief that consciousness is merely a sort of phosphorescence accompanying the functional activity of certain cerebral neurones. For, then, if the associative connections of some little system of neurones were broken, we might imagine this system functioning independently, and giving off its little gleam of phosphorescence ("consciousness") in solitude; the potential object of perception (for example) not seen by any observer, not thought by any thinker, not experienced by any subject.

But if co-consciousness were of this nature we should never have known anything about it. Our knowledge of those co-conscious phenomena which Dr Prince himself has described so fully and so convincingly, is possible only because they are the experiences of some

* James Ward, "Psychological Principles," p 21

subject or self that has been able to tell us about them. Co-conscious thoughts are not discovered floating about in the void ; they are always claimed by some thinker. As Dr Prince truly says " the evidence for co-consciousness . is of precisely the same character as that for the occurrence of consciousness in any other individual but oneself " * But we regard " consciousness " in other people as being of the same nature as the " experience " of which we ourselves are subjects. The evidence for co-consciousness is evidence of " awareness " by a self, and cannot be anything else.

Although we are forced to believe in the occurrence of this type of multiple personality, we encounter many difficulties if we try to understand what really happens when a co-conscious personality is formed. The chief of these difficulties is how to reconcile the concurrence of two separate streams of consciousness, in one human being, with the fundamental postulate of psychology—the postulate that all consciousness is the experience of some subject. If there are two distinct streams of consciousness, occurring simultaneously, there must be, it is said, two distinct subjects of experience.

If we adopt the spirit hypothesis of the nature of mediumistic controls this difficulty does not arise , for possession by an extraneous spirit provides the distinct subject of experience desiderated. Few, however, will be prepared to believe that ordinary co-conscious secondary personalities are of this nature , although some spiritists, like the late Dr. James Hyslop, for example, assert that they very often are. More orthodox psychologists who believe in the occurrence

* " The Unconscious," p 158

of co-conscious personalities, but deny that the self is a composite structure which can be broken up into its component parts, feel compelled to fall back upon some other hypothesis.

About sixteen or seventeen years ago, Mr Gerald Balfour in his presidential address to the Society for Psychical Research, discussed this question. Approaching it from the standpoint of a metaphysician he adopted the view, first put forward by Leibnitz, "that the living creature is a kind of hierarchy of monads arranged in orderly and systematic relation with each other, each reflecting in its own way the states of consciousness of all the rest." In his opinion every distinct stream of consciousness implies a distinct centre of psychical activity or mind, and "a plurality of distinct streams of consciousness in man implies a plurality of minds associated in the human organism" * Mr. Balfour did not apply his speculation to multiple personality in detail. He was dealing more particularly with the problem of telepathy and expressed the opinion that the *rapport* between the different members of the hierarchy of monads—a *rapport* that is necessary for their harmonious co-operation under the guidance and control of the one dominant monad which constitutes the real self of each of us—is of the nature of telepathy.

A similar view had been put forward by Professor McDougall, tentatively in his work, "Body and Mind," and more explicitly in his presidential address to the Society for Psychical Research three years ago. He there maintained that each distinct stream of purposive effort is the activity of a unitary self or ego; and he put the consequences of this view quite plainly

* *Proc. S P R*, Part LII, p. 392

when he said: "I who consciously address you am only one among several selves or egos which my organism, my person, comprises. I am only the dominant member of a society, an association of similar members. But I and my associates are all members of one body, and so long as the organism is healthy we work harmoniously together. If I am weak and irresolute. . . one or more of my subordinates gets out of hand, I lose my control, and division of the personality into conflicting systems replaces the normal and harmonious co-operation of all members in one system. And in extreme cases such a revolted subordinate, escaped from the control of the dominant member or monad, may continue his career of insubordination indefinitely, acquiring increased influence over other members of the society and becoming a serious rival to the normal ruler or dominant. Such a rebellious member was the famous Sally Beauchamp, and such was, I suggest, the childish phase of the *Doris Fischer* case. All such automatisms imply literally a dis-association of the society or association" *

Dr. McDougall believes that this conception of the polypsychic nature of man's being affords the most satisfactory solution, not only of the facts of divided personality, but also of the facts of automatism; and that it solves the difficulty of reconciling those facts with what he regards as "the fundamental principle of the unitary ego or self as the ground of the unity of consciousness." He is very thorough in his application of this conception, for he invokes it, not only in explanation of co-conscious personalities, but also of the automatisms of sleep and of hypnosis, and the "second-

* *Proc S P R*, Part LXXX, pp 111, 112

dary automatic " actions of everyday life. Dream images and dream thoughts are the reflection, in the passive self of the dreamer, of the thoughts of subordinate members of the psychic hierarchy. In hypnosis also, the dominant monad is passive and all the phenomena of hypnotic and post-hypnotic suggestion are due to the activity of subordinate monads.

This thorough-going application of the metaphysical doctrine of Leibnitz and Lotze, that " the body is in its real nature an organized system of beings of like nature with the soul " answers a criticism of Dr McDougall's views which I made on a former occasion. " There seem no good grounds," I said, " for Dr McDougall's contention that ' abnormal conditions of two distinct types are commonly confused together under the head of co-consciousness or subconscious activity,' and that a second soul or psyche is necessary in the one type and not in the other. At the extremes of the series of co-conscious phenomena the conditions do indeed seem to be very different, but it is impossible to say at what point secondary psychic beings or souls must be assumed " * Dr McDougall's extension of the limits within which subordinate psychic beings are operative seems to be a withdrawal of his contention that " two distinct types are commonly confused together under the head of co-conscious or subconscious activity ".

My own chief difficulty in accepting Dr McDougall's original explanation of the nature of such a personality as " Sally " was based on my personal observations of the infinite gradations of co-consciousness found between fully developed secondary personalities and the trivial dissociations of hysterical anæsthesia and similar

* " Medical Psychology and Psychical Research," p 234

phenomena in hypnotic experiments, and I still find it hard to believe that a hierarchy of subordinate psychic beings must be assumed in order to understand how these everyday features of hysteria and hypnotism are possible

I have dealt, perhaps at undue length, with the problems of secondary personality; I have pointed out some of the difficulties inherent in the conception of co-consciousness, and I have indicated my belief that mediumistic controls are of the nature of co-conscious personalities. It is true I have not laid before you the evidence on which this belief is based—evidence derived partly from personal observation and experiment with mediums and hypnotized persons; partly from a fairly extensive study of the records of mediumship and multiple personality. But if you will, for the moment, accept my opinion on this matter, then you will not blame me for having strayed too far from the subject of discourse allotted to me, rather, perhaps, you will agree with me that the problem of multiple personality is the central problem of Psychology in its relation to Psychical Research

